STANDARDIZATION

Formerly Industrial Standardization

News Magazine of the American Standards Association, Incorporated

American Standards Association Incorporated

Officers

†THOMAS D. JOLLY, President
H. S. OSBORNE, Vice-President
HOWARD COONLEY, Chairman, Executive Committee
VICE-ADMIRAL G. F. HUSSEY, JR, USN (Ret), Secretary
CYRIL AINSWORTH, Asst Secretary and Technical Director

Consultant

P. G. AGNEW

Board of Directors

DONALD ARMSTRONG, President, U. S. Pipe & Foundry Co—Cast Iron Pipe Research Assn
ROBERT I. CATLIN, Vice-President, Aetna Casualty and Surety Co—Nat Safety Council
RICHARD A. COLGAN, JR, Exec Vice-President, Nat Lumber Mfrs Assn—Nat Lumber Mfrs Assn
CLARENCE L. COLLENS, Chairman of the Board, Reliance Elec and Engg Co—Nat Elec Mfrs Assn
*HOWARD COONLEY, Director, Walworth Co—Mfrs Stdzn Soc of the Valve & Fittings Industry
E.H. EACKER, President, Boston Consolidated Gas Co—Amer Gas Assn
*R.E. GAY, President, Bristol Brass Corp—Copper and Brass Research Assn
J.H. HUNT, Director, New Devices Section, Gen Motors Corp—Soc of Automotive Engrs
*THOMAS D. JOLLY, Vice-President, Aluminum Co. of America—President, ASA
R. OAKLEY KENNEDY, Formerly Vice-President, Cluett, Peabody and Co, Inc—Member-at-Large
*FREDERICK R. LACK, Vice-President, Western Elec Co, Inc—Past President, ASA
J.H. McELHINNEY, Vice-President, Wheeling Steel Corp—Amer Iron & Steel Inst
CAROL WILLIS MOFFETT—Member-at-Large
HAROLD H. MORGAN, Vice-President and Chief Engr, Robert W. Hunt Co—Amer Soc for Testing Materials
*H.S. OSBORNE, Chief Engr, Amer Tel & Tel Co—Vice-President, ASA
CURTIS W. PIERCE, President, Factory Ins Assn—Fire Protection Group
AUGUSTE G. PRATT, Chairman of Board, The Babcock & Wilcox Co—Amer Soc of Mech Engrs
ROBERT A. SEIDEL, Vice-President and Comptroller, W. T. Grant Co—Nat Retail Dry Goods Assn
P.M. SHOEMAKER, Vice-President, Delaware, Lackawanna & Western Railroad—Assn of Amer Railroads
JOHN R. SUMAN, Vice-President and Director, Standard Oil Co of New Jersey—Amer Petroleum Inst
W. C. WAGNER, Exec Dept, Philadelphia Elec Co—Chairman, ASA Standards Council

*Members of the Executive Committee

Standards Council

W. C. WAGNER, Exec Dept, Philadelphia Elec Co, Chairman
J. R. TOWNSEND, Bell Tel Labs, Vice-Chairman

Chairmen of Correlating Committees

BUILDING—Theodore I. Coe, Technical Secretary, Amer Inst of Architects, Dept of Education and Research
CONSUMER—Robert A. Seidel, Vice-President and Comptroller, W. T. Grant Co, New York
ELECTRICAL—C. R. Harte, Connecticut Company, New Haven, Conn.
HIGHWAY—S. J. Williams, Asst to Pres, Nat Safety Council, Chicago, Ill.
MECHANICAL—F. T. Ward, Wilton, Conn.
MINING—Lucien Eaton, Consulting Engineer, Milton, Massachusetts
SAFETY—W. F. Weber, Hazards Engr, Western Elec Co, Kearny, New Jersey

ASA Member-Bodies

Air Conditioning & Refrigerating Machinery Assn
Aluminum Assn
Amer Gas Assn
Amer Inst of Bolt, Nut & Rivet Mfrs
Amer Inst of Elec Engrs
Amer Inst of Steel Construction, Inc
Amer Iron & Steel Inst
Amer Ladder Inst
Amer Petroleum Inst
Amer Soc of Bakery Engrs
Amer Soc of Civil Engrs
Amer Soc of Mech Engrs
Amer Soc for Testing Materials
Amer Soc of Tool Engrs, Inc
Amer Water Works Assn
Anti-Friction Bearing Mfrs Assn, Inc
Asbestos Cement Products Assn
Asphalt Roofing Industry Bur
Associated Gen Contractors of Amer Inc
Assn of Amer Railroads
Assn of Casualty and Surety Cos, Accident Prevention Dept
Automobile Mfrs Assn
Business Forms Inst
Cast Iron Pipe Research Assn
Conveyor Equipment Mfrs Assn
Copper & Brass Research Assn
Elec Light and Power Group:
  Assn of Edison Illum Cos
  Edison Elec Inst
Fire Protection Group:
  Associated Factory Mutual Fire Ins Cos
  Nat Bd of Fire Underwriters
  Nat Fire Protection Assn
  Underwriters' Labs, Inc
Foundry Equipment Mfrs Assn
Gas Appliance Mfrs Assn
Heating, Piping and Air Conditioning Contractors Nat Assn
Inst of Radio Engrs
Limited Price Variety Stores Assn Inc
Mfrs Stdzn Soc of the Valve and Fittings Industry
Metal Cutting Tool Inst
Motion Picture Research Council, Inc
Nat Aircraft Stds Com
Nat Assn of Hosiery Mfrs
Nat Assn of Mutual Casualty Cos
National Coal Assn
Nat Elec Mfrs Assn
Nat Lumber Mfrs Assn
Nat Machine Tool Builders' Assn
Nat Office Management Assn
Nat Paint, Varnish and Lacquer Assn, Inc
Nat Retail Dry Goods Assn
Nat Safety Council
Outdoor Advertising Assn of Amer, Inc
Oxychloride Cement Assn
Photographic Mfrs Group:
  Ansco Div of Gen Aniline & Film Corp
  Eastman Kodak Co
  E. I. du Pont de Nemours & Co, Photo Products Dept
Portland Cement Assn
Radio Mfrs Assn
Screw Industry Stds Com:
  Machine Screw Nut Bur
  Sheet Metal Screw Statistical Service
  U.S. Cap Screw Service Bur
  U.S. Machine Screw Service Bur
  U.S. Wood Screw Service Bur
Soc of Automotive Engrs, Inc
Soc of Motion Picture Engrs
Structural Clay Products Inst
Telephone Group:
  Bell Tel System
  U.S. Independent Tel Assn

Associate Members

Acoustical Soc of Amer
Amer Assn of Textile Chemists and Colorists
Amer Gear Mfrs Assn
Amer Home Economics Assn
Amer Hotel Assn
Amer Inst of Architects
Amer Inst of Laundering
Amer Soc of Heating & Ventilating Engrs
Amer Soc of Lubrication Engrs
Amer Soc of Refrigerating Engrs
Amer Transit Assn
Amer Trucking Assn, Inc
Amer Welding Soc
Assn of Consulting Management Engrs, Inc
Assn of Iron and Steel Engrs
Compressed Gas Assn, Inc
Douglas Fir Plywood Assn
Grinding Wheel Inst
Gypsum Assn
Heat Exchange Inst
Illuminating Engg Soc
Industrial Safety Equipment Assn
Internat Acetylene Assn
Marble Inst of Amer
Metal Lath Mfrs Assn
Metal Window Inst
Nat Assn of Finishers of Textile Fabrics
Nat Assn of Wool Mfrs
Nat Elevator Mfg Industry, Inc
Nat Federation of Textiles, Inc
Nat Lime Assn
Photographic Soc of Amer, Inc
Red Cedar Shingle Bur
Scientific Apparatus Makers of Amer
Textile Color Card Assn of the U.S., Inc
Textile Distributors Inst, Inc
Veneer Assn

Why NOT an "ASA Standard"?

Such titles as "American Standard Building Code" or "American Standard Safety Code" or "American Standard Specifications for . . ." have certainly come to your notice. And probably you have all remarked, too, reference in some of our lists of American Standards to "ASA K60.1-1949," or "ASA L14.42-1949," and so on.

We are sure you have noticed the use of the letters "ASA" because so often we see references to "ASA Standards."

Undoubtedly you will be surprised to learn that the entire philosophy of standardization as carried out in the United States is opposed to the use of the term "ASA Standard." In the staff of the American Standards Association, it is considered a violation of the idea of coordination on which the ASA is based to refer to a standard approved by the American Standards Association as an "ASA Standard." It is an affront to you and your organization, to the trade associations and technical societies, the producer groups, the user groups, and the general interest groups which have worked together and have come to an agreement that has resulted in approval of this document as a truly "American Standard."

An "American Standard" is *not* a standard developed and accepted by one organization—either the American Standards Association or any other group. The approval of the American Standards Association certifies that this "American Standard" is the practice agreed upon by all the national groups concerned—and that it has a national standing.

However, as a matter of convenience in record keeping and to make American Standards handy for those who want to use them, each standard approved by the

Company Members

More than 2100 companies hold membership either directly or by group arrangement through their respective trade associations

ASA is assigned a number. These *are* ASA numbers—they have nothing to do with any other organization. They are identification numbers only. When the American Standards Association finds that a standard prepared by a committee under the sponsorship of the American Society for Testing Materials, for example, has been accepted by all the national groups of producers, users, and general interests that are concerned, that ASTM standard is granted approval as an "American Standard." It then receives an ASA number in addition to its ASTM number. Its title becomes, for instance, "American Standard Method of Drop Shatter Test for Coke (ASTM D 141-48; ASA K 20.4-1948)."

The title emphasizes the fact that the development of a standard prepared under the auspices of a sponsor organization (in this case the American Society for Testing Materials) has been examined by the quasi-judicial reviewing groups in the American Standards Association and that the standard has been found to have full acceptance by all groups concerned throughout the United States. Therefore, it has been given official recognition and standing as "American Standard."

It is *not* an ASA standard—but besides being an ASTM standard, it is an American Standard.

G. F. Hussey, Jr
Secretary

Our Front Cover

Looking south on Broadway to Times Square, the visitor to New York is faced by signs of many varieties. Wall signs, hanging signs, and marquee signs are among those whose construction and maintenance are covered in recently approved American Standard Building Requirements for Signs and Outdoor Display Structures, A60.1-1949. For highlights of the standard and its preparation, see story on page 146. Photo — Charles Phelps Cushing.

Vol. 20 No. 6 Standardization June 1949

Published Monthly by AMERICAN STANDARDS ASSOCIATION INCORPORATED 70 E. 45th St., N. Y. 17

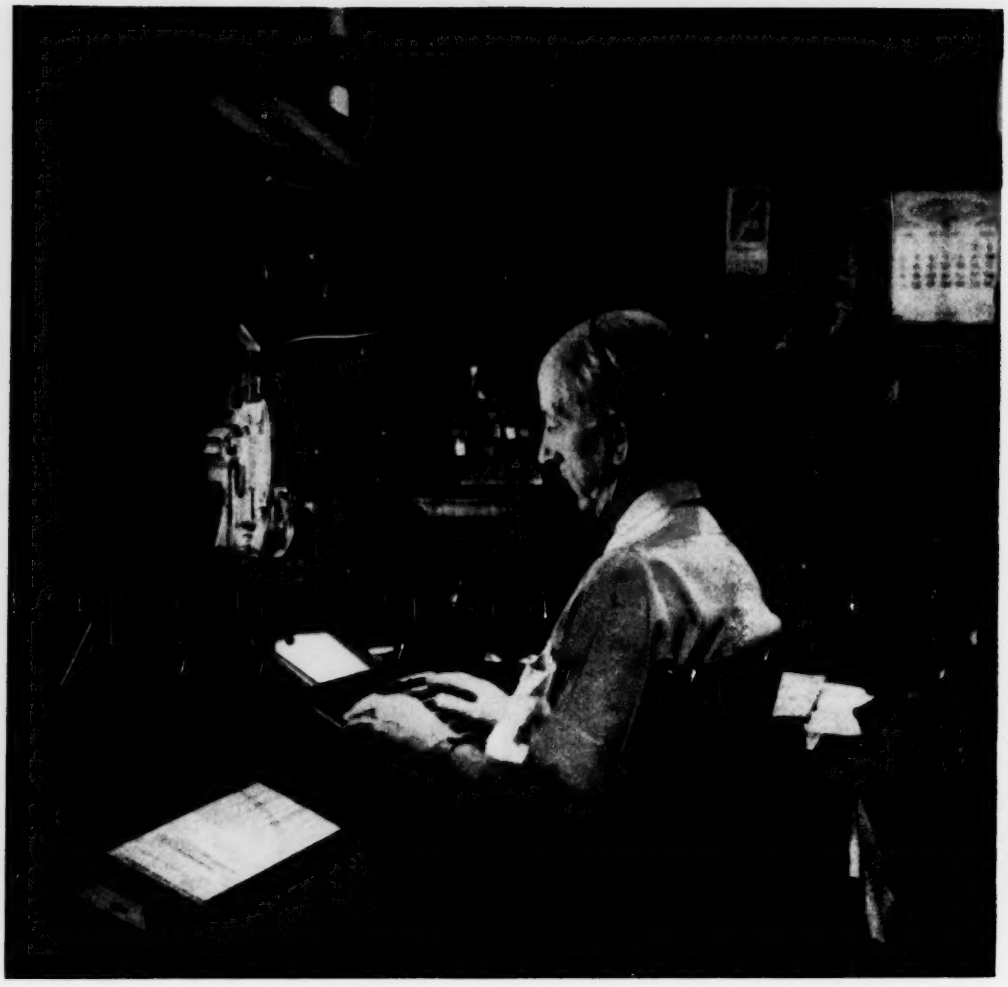
In This Issue

ASA
Reg. U. S. Pat. Off.

Ruth E. Mason, Editor Barbara A. Lamson, Production Editor
Advertising Representatives—Woolf & Elofson, 70 E. 45th St., New York 17, N.Y.

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

Single copy, 35¢. $4.00 per year (foreign $5.00). Schools and libraries $3.00 (foreign $4.00). Re-entered as second class matter January 11, 1949, at the post office at New York, N. Y., under the Act of March 3, 1879. Indexed in the Engineering Index and the Industrial Arts Index.



Sonotone Corporation

Hearing aids are used by all types of people in all walks of life. One thing in common is needed —uniformity in performance of the tubes. For the story on how this uniformity is achieved by one manufacturer, see the article starting on the facing page

Quality Control Makes Good In a Hearing Aid Plant

Sonotone Corporation uses quality control in tube production to reduce the number of rejects from inspection departments; to satisfy stringent requirements as to reliability, uniformity, and amplification; and to guarantee "hearing" to customers

By A. B. Mandel

Chief Engineer, Quality Control and Inspection Division
Sonotone Corporation

QUALITY control has become an essential part of the Sonotone organization, because poor quality, rework, and scrap cost too much.

The reason quality control has been recognized as essential in our operations is that any defective product comes back to the Production Department. Items may be shipped in what appears to be a satisfactory condition and operate for a short period of time, but if they fail while under one year guarantee, the repair and reconditioning is at our expense. In reality, we guarantee hearing to our customers. If the Sonotone Hearing Aid fails to give satisfactory hearing, the user being the judge, it may be exchanged for a similar unit at any office without charge. The defective unit is then returned to our plant for reconditioning. Obviously, then, one of our prime interests is to keep the instrument in service. Lack of uniformity may also cause the return of instruments. Uniformity is necessary in order that the consultant may provide a proper initial fitting for the customer and also in order that when replacement is made, the customer gets an instrument which will operate in a manner equivalent to his original equipment. Customers seem to have a unique knack of remembering how their original equipment performed.

Reliability and long life are not items which can be inspected 100 percent into any unit. These qualities, as well as the more easily measured ones, must be obtained as a result of careful process control on components and sub-assemblies, and reliable production methods.

Used by Inspection, Production, and Engineering Departments

Quality control is, of course, used by others in addition to Quality Control and Inspection personnel. The results and data collected are used continually by the Production Department as a guide toward main-

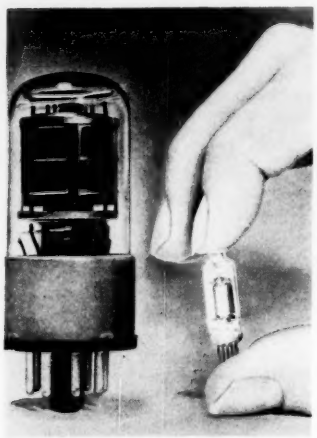


Fig. 1. Midget vacuum tube (less than one inch long) is compared with standard-size radio tube—for size.

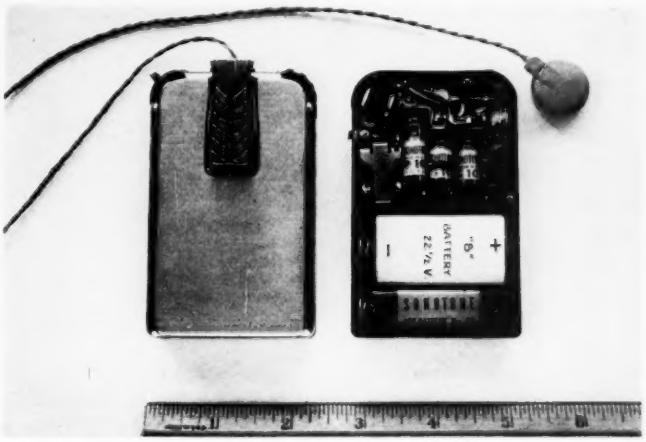


Fig. 2. Front view of Sonotone hearing aid (left) shows cord and receiver. Tubes, batteries, and other components are shown in interior view (right). Quality control procedures apply to both hand and machine manufacturing operations.

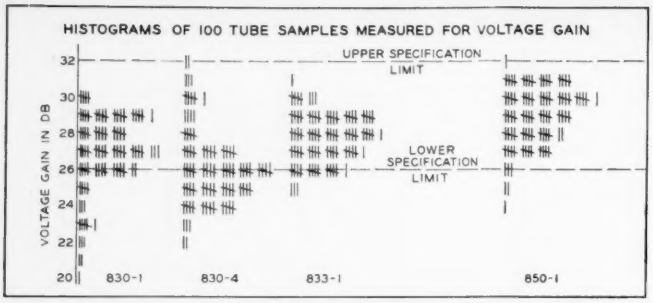


Fig. 3. Each histogram is statistically different from the other three and, therefore, all four must have resulted from different sets of causes.

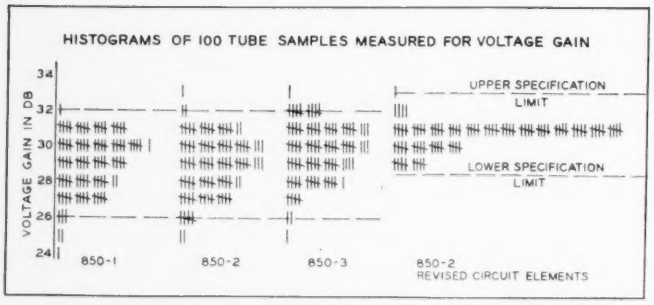


Fig. 4. The three histograms at the left indicate the approximate extremes of variation that can occur if tubes are manufactured under conditions statistically alike. A comparison of the second and fourth histograms indicates the improved uniformity obtained by the circuit elements.

taining operations efficiently and producing uniform hearing aids and components. The quality control records are also useful to the Engineering Department for design purposes and also when they are called upon to assist production groups in correcting trouble when it arises. Here the charts and data are of inestimable value in determining when the former level of operation has been obtained.

How It Works in Practice

A specific example of procedures is given in the following description of a joint quality control program carried on inside our organization. One department is a customer and another is a vendor; namely, the Hearing Aid manufacturing division, and the Tube manufacturing division. (We want all our vendors to adopt Quality Control.)

The Electron Tube group is physically separated five miles from the Hearing Aid manufacturing division. It is the source of supply for the vacuum tubes used in the instruments. These are shown in Figures 1 and 2. Vacuum tube grids are machine wound. Other parts are made on punch presses, but assembly is a hand operation. Quality Control procedures apply to both hand and machine operations.

Because great amplification and good uniformity are stringent requirements, tube plant rejects, or the percentage of nonconforming tubes ran high before the adoption of quality control procedures. The lack of uniformity was so great that we did selective assembly by sorting tubes into various grades for each position in which they were to operate.

Number of Rejects Used to Be Large

Whenever a large percentage of any product is defective, some of these are on the borderline; that is, some just graze the specification limits, and some just miss and are rejected. Unfortunately, the presence of large numbers of tubes with marginal operating conditions causes tubes to be rejected at the Hearing Aid plant. The rejects at the Hearing Aid plant gave rise to the return and circulation of a large number of tubes between plants. This, combined with a large fraction of defectives produced, became the concern of management.

Clearly, here was a location where good quality control procedures were required. Old-fashioned inspection methods and procedures do but one thing—they sort the good from the bad. In our operations we need modern quality control procedures which not only eliminate nonconforming material but also keep the plant management informed, correctly tell whether operations are changing, and assist production groups in increasing the percentage of effective material produced.

Data Was Collected and Presented in Histograms

To start with, quality control data were collected to describe the characteristics of the electron tubes manufactured, and were presented in the form of histograms. It was found that the variation in gain or amplification shown in the form of histograms in Figure 3 for dates 830-1 and 831-4 was greater than the difference between the tolerance limits. A large percentage of tubes failed to conform to specifications, and these had been discarded as rejects.

The test equipment was not sufficiently stable to check repeatedly borderline or marginal tubes as either effective or defective. Slight upward drifts in the calibration of test equipment might cause a significant increase in the number of defectives, or vice versa. This is not only expensive and annoying, but creates friction between the Tube Inspection and Tube Manufacturing groups. Better test equipment was required and was obtained. Even with accurate test equipment, this situation continued, and there were large differences between the performance of a group of tubes manufactured on one day and those manufactured on the next. The mathematical part of quality control provides a useful tool to ascertain whether these variations are due to chance or to an assignable cause. As there is a very small probability that chance variations can account for the existing difference, we are forced to assume that there is some

It was only eight years ago, in 1941, that the first practical guides for using statistical methods to control quality of materials and manufactured products during production were made available to American industry. They had been requested by the War Department which had just plunged into an intensive effort to provide equipment and materials needed for the defense program. During these eight years, the three quality control standards* have not only played an important role in the amazing war production record of the United States but have also now become standard practice in several other industrial countries of the world.

This paper, one of several presented at a recent conference on the Why and How of Quality Control sponsored by the Metropolitan Section of the American Society for Quality Control and arranged by the Extension Division of the School of Business and Civic Administration of the City College of New York, describes how one large company maintains uniformity in the performance of its product, has increased the efficiency of its production processes, and has helped to maintain its customers' satisfaction through the use of the statistical method of quality control.

* American War Standard, Guide for Quality Control, Z1.1-1941; American War Standard, Control Chart Method of Analyzing Data, Z1.2-1941; American War Standard, Control Chart Method of Controlling Quality During Production, Z1.3-1942.

reason for the difference, and refer to this reason as an assignable cause. The cause must be found and eliminated if the day-to-day variation is to be made more uniform and only subject to the vagaries of chance. Tube engineers believed, as many people do, that their particular work was different and not subject to the ordinary laws of chance. This is not justified—the same laws apply to all operations, with perhaps relatively minor variations.

Causes of Variations Analyzed

Continued cooperation between quality control and tube personnel reduced these variations by finding the causes and making the manufacturing process and methods alike from day to day. After considerable work, shrinkage had been decreased, uniformity of tubes was better, and there was no significant difference between one day's production and another. Figure 4 shows the approximate extremes of variation that can occur between samples of 100 when the only variations are those due to chance. The tube engineer had now reached a point where he felt that some of the operations which were necessary to make tubes operate more efficiently in the hearing aid were detrimental to the service life and stability of the tube. He believed that the circuit could be changed so as to react more favorably to the tubes now being produced. Circuit elements were carefully studied and adjusted, resulting in more uniform operation as shown at the right of Figure 4. (Specification limits were revised upwards, as additional gain is desirable in hearing aids and can be compensated for if present in excess amounts.)

As a result of changes incorporated in the circuit and changes which had been made in the tube, there was now a decided decrease in the percentage of rejects. Marginal tubes were no longer a problem, not only because of the improved quality of the test set but because of the fact that there were so few of them in existence.

In addition to these two advantages—the increase in the yield from the production process and the greater uniformity of the tubes produced—there were others.

Fewer Tests Required for Tube Inspection

The operation of a hearing aid in the hands of a user is such that any combination of fresh "A" and "B" batteries and old "A" and "B" batteries may occur. For each position in which a tube is used, it is necessary to check for four conditions of operation, using fresh "A" and "B" batteries, fresh "A" and worn out "B" batteries, etc. Voltage gain tubes are used in two positions in the instrument. With the former lack of uniformity this meant that eight tests per tube were required. The practice of sorting tubes into categories, first according to location and secondly according to the amount of gain, might reduce this to four tests. With a sorting procedure, six classifications existed for a single tube used in one instrument. This made inventory procedures more complicated, since tubes of one group could only be used with an equal number from another specified group. The improvement in the quality and uniformity made it possible to inspect the tubes under one condition of operation. Tubes passing this test were subsequently sampled in large groups and have generally proved satisfactory for operations under the other conditions. An additional saving was obtained, since fewer tube inspectors were required.

Tube Exchanges Reduced

Now let us look at the Hearing Aid plant. The improved uniformity allowed the stocking of a single classification of tube for each type, since it was possible to assemble tubes into the circuit in a random manner and obtain uniform operation. The operation of adjusting and matching the circuit and the tubes was reduced so that half the operators were no longer required on this phase of operations. Some tubes exchanges were required to obtain uniform hearing aids, but the number of such tube changes was reduced to approximately one-tenth of the former value. The number of tubes which had to be rejected after receipt in the hearing aid division was also much smaller and fewer tubes circulated between plants. As a result of the combined effort, we obtained:

Reduced inspection costs for tubes (actually fewer operators).

A reduction in the number of rejects produced and in the cost of tube manufacture.

An improvement in the uniformity of instruments.

A reduction in the number of operators required to assemble and adjust the tube and hearing aid combination.

A reduction in number of tubes circulated back from the hearing aid plant and also lower handling costs.

Due to tube reliability and uniformity of tubes in instruments, a reduction in the number of instruments giving unsatisfactory service.

To summarize, statistical quality control procedures have been helpful in indicating operations where improvements can be obtained. Success, however, has been the result of the use of the tools of statistical quality control combined with sound engineering practice and the cooperative efforts of management and the personnel of the Electron Tube, Engineering, Manufacturing, and Quality Control Divisions.

QUALITY CONTROL AGAIN MAKES GOOD IN —

Statistical Control vs 100 Percent Inspection

Excerpt from a paper by E. H. MacNiece Director of Quality Control, Johnson & Johnson

THERE is frequently confusion between quality control and inspection. Inspection is a sorting process to classify materials, parts, or products as satisfactory or unsatisfactory. As control becomes more effective the need for sorting decreases.

Most industries today can no longer afford to produce quantities of goods and then sort the good from the bad. The nature of products from modern processes, moreover, generally requires destructive tests necessitating control in place of sorting.

Undoubtedly the most important reason for quality control is that industry has awakened to the fact that 100 percent terminal inspection is not very reliable, at best. In our own company we had a series of experiments applying 100 percent inspection on some visually determinable quality characteristics, using selected personnel who were unaware of the experiment. Careful reinspection indicated 85 percent reliability. Units which had already been subjected to 100 percent inspection were again reinspected and overchecked. The reliability was then 89 percent. The experiment was continued with the following results:

Percent Inspection	*Percent Reliability*
100	85
200	89
300	92

This is, of course, with visually determinable quality characteristics. Better reliability may be obtained with inspection by attributes, using gages, but aside from the mental fatigue produced by many repetitious judgments there are other distractions which reduce the reliability of any 100 percent inspection.

We, therefore, have greater confidence in our statistical controls which can assure a reliability of 99.73 percent.

A few months ago I discussed quality control with a chief inspector in a machine shop. He complained that quality control was fine for process industries but it could not be applied on machined parts. There were several tote pans of machined parts near a machine. Each pan contained approximately 4,000 pieces. I asked him if no more than 10 pieces out of 305 inspected were found to be outside limit whether he would be willing to release that particular pan of work without 100 percent inspection. After some thought he stated that such an arrangement would only give about a probable 2 percent culling in assembly and that this percentage was not unusual. Yes, he would be satisfied to accept a pan on that basis.

The discussion then pointed to periodic sampling at the machine for control with the understanding that 100 percent inspection would only be resorted to on work produced when the control charts showed the process to be out of control.

The first thought of acceptance sampling was appealing because it would cut his inspection costs to a minimum. The second thought of control was more appealing because it would permit adjustments as the process continued.

Business Forms Institute Joins ASA

The Business Forms Institute, new Member-Body of the American Standards Association, is the outgrowth of three separate industries originally covered by the Salesbook Manufacturers Association, the Autographic Register Manufacturers Association, and the Continuous Forms Printers Association, founded in 1916, 1921, and 1923, respectively. These three organizations were consolidated in 1933 into the Specialty Accounting Supply Manufacturers Association, with headquarters in Chicago.

Reorganization in 1944 resulted in the change of name to the Business Forms Institute, and at the same time the industry was renamed the Manifold Business Forms Industry. There are currently 26 member companies.

BFI's officers for 1949 are:

President, Carl W. Brenn—vice-president and general manager, Autographic Register Co, Hoboken, N. J.

First vice-president—J. R. Cook, secretary and general manager, The Hamilton Autographic Register Co, Hamilton, Ohio.

Second vice-president—Frank H. Abbott, Jr, president, Sunset-McKee Co, Oakland, Calif.

Executive secretary—H. M. Meloney, Business Forms Institute, New York, N. Y.

The Institute's program includes an information service to its members in the field of industrial relations, and research in manufacturing, sales, accounting and finance, and public relations.

The Standardization Committee is working on the development of standards for business forms, particularly sizes, and standards for paper for use in the business forms industry. This work is being consolidated with project on Office Standards, X2, sponsored by the National Office Management Association, under the procedures of ASA.

The "Golden Rules" for Arbitration

A set of standards for use as guides in the process of arbitration has been drafted and submitted to trade and commercial organizations in the United States and in different countries, with a view to eventually obtaining Standards of Practice that will be acceptable under any existing arbitration laws or rules of procedure by any organization that maintains facilities and services for commercial arbitration. These draft standards are the work of the International Business Relations Council of the American Arbitration Association.

The standards are essentially rules of human conduct for the guidance of the participants in the arbitration process—the arbitrator himself, the parties whose dispute is being arbitrated, and the administrative agency under whose auspices the arbitration is carried out.

A few quotations will indicate the type and flavor of the standards:

"The arbitrator is appointed to make a final decision, based upon evidence usually submitted at a hearing in the presence of all parties. He owes a duty to the parties to render a decision and not to act as mediator or conciliator in an effort to obtain a compromise settlement."

"Whenever the arbitrator receives a communication from a party, he should immediately disclose its contents to all parties and thus afford them the opportunity of replying to such communication."

"The arbitrator should not disclose the terms of his award during a hearing, nor permit his mind to be made up before all of the evidence has been presented. Nor should he indicate the nature of his decision separately to either party. Its terms should be disclosed identically and simultaneously, in writing, to all parties."

"It is the duty of the party initiating the arbitration to set forth precisely the matter in issue, the amount claimed and the remedy sought in order that the arbitrator will not exceed his authority by determining matters not submitted to him, nor fail to determine matters that the parties intended to refer to him for judgment."

"A party should not send communications to the arbitrator without sending a copy to the other party; oral communications to the arbitrator, other than at a hearing, should be avoided."

In drafting the standards the International Business Relations Council has drawn upon twenty years of experience of the American Arbitration Association, which has in this time dealt with 30,000 disputes, nearly all of which have been settled without recourse to the law courts.

Captain Henry E. Bernstein, USN

Military Standards Agency Reorganized

Colonel Louis J. Tatom, SC

Under the terms of a new charter recently signed by the assistant secretaries of the three military services, the government body organized in December, 1943 as the Army-Navy Electronic Standards Agency has been reconstituted as the "Armed Services Electro Standards Agency." The change provides for official participation by the Air Force, which became a separate component of the National Military Establishment under the provisions of the National Security Act of 1947.

Employing 126 persons, the Agency occupies five buildings just outside the main area of Fort Monmouth, N. J., near the Signal Corps Engineering Laboratories. Sales and technical representatives of radio-electronics manufacturers are welcome to visit the Agency at any time, according to its officials, to obtain first-hand information on the work it is doing. The co-directors of the Agency are Colonel Louis J. Tatom, Signal Corps, and Captain Henry E. Bernstein, U. S. Navy. Mr. Clayton J. Held represents the Air Materiel Command of the Air Force.

The mission of the Standards Agency is four-fold:

(1) To reduce the number of styles and types of electronic components used in the manufacture of military equipment of all kinds.
(2) To insure their quality and dependability.
(3) To achieve a high degree of interchangeability.
(4) To designate approved sources of supply.

The Radio Manufacturers Association is cooperating wholeheartedly in implementing this program. A procedure for obtaining industry agreement on proposed "JAN" (Joint Army-Air-Navy) specifications was worked out by RMA and the Agency at a meeting held in New York at the time of the Institute of Radio Engineers convention this year. Dr. W. R. G. Baker and Virgil M. Graham represented the Association and Colonel Tatom and Captain Bernstein the Agency.[1]

Considerable progress in alleviating the war-born confusion over electronic parts is being made. For instance, three standard crystal holders, to meet any foreseeable requirement, have been adopted to replace 350 different holders which were formerly used. A single standard wire-wound resistor take the place of 33 former non-standard types. Audio and power transformers that required more than 10,000 different sizes and shapes of cases can now be accommodated in only 22 standard containers. Measuring instruments and tubes have received the benefit of special attention. More than 37,500 types of meters have been reduced to 3,700 standard types, and 3,000 types of vacuum tubes have been cut down to 800 for replacement purposes and to about 200 for new applications.

[1] For details of this procedure see p. 160.

Here's How to Construct Your

Signs and Outdoor Displays

New American Standard provides technically sound requirements for design, erection, and maintenance of signs and structures carrying messages to the public

Albert H. Hall
Director, National Institute of Governmental Purchasing
and
H. M. Lawrence
Materials Engineer, American Standards Association

A SIGNIFICANT addition to the 24 American Standards concerned with building codes is the recently approved American Standard Building Code Requirements for Signs and Outdoor Display Structures, A60.1-1949. Designed primarily to provide technically sound requirements for the design, erection, and maintenance of signs and structures carrying messages to the public, the new standard is useful immediately to governmental officials—both state and local, architects, engineers, contractors, the outdoor advertising industry and the general public alike.

Emphasis should be placed on a feature that this standard does not attempt to cover—that is, the standard does not argue the point of whether or not signs and display structures should be erected.

In drafting the standard, the committee did not consider aesthetic or social problems, because such questions are matters for decision by the public itself. Irrespective of the physical location of the signs, the new standard tells how to design, erect, and maintain them without introducing new, foreseeable hazards into our daily lives. In arriving at its recommendations, the ASA committee (most of whom are engineers) did not concern itself with whether a sign 20 feet high and 40 feet long would be considered an eyesore by the committee while another 10 feet high by 20 feet in length might be less objectionable. Rather, the committee was guided solely by necessity for setting forth requirements that would insure that a sign would be properly supported and anchored so that it would not be blown over in a gale.

The new standard was prepared by a sectional committee, organized under ASA procedure with the American Municipal Association and the Outdoor Advertising Association of America as joint sponsors. The personnel of the committee appears on page 148. The committee, even though its work was interrupted by the war, considered eight drafts—in meetings or by correspondence—before all points of view were harmonized.

It may be helpful to give some discussion of subjects that required extended consideration by the committee. These include permissible heights of signs, allowable wind loads, provisions limiting the use of plastics on signs—a matter that was introduced about three years ago, when the committee had practically completed its program.

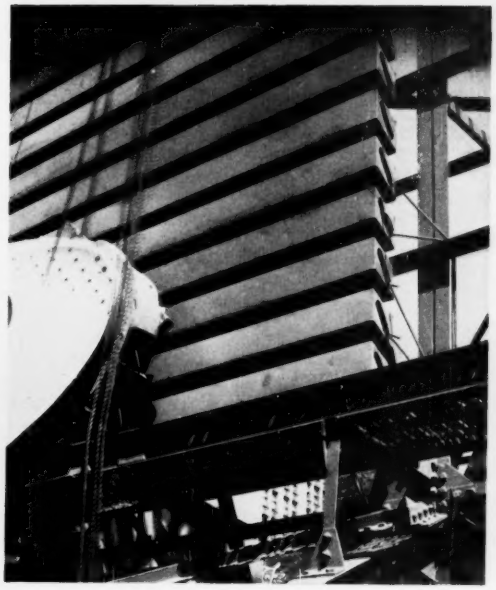
Heights of Signs

Fully cognizant that the practical minds of those who use signs and outdoor display structures as advertising media will tend to limit the heights of signs above the ground to insure the best appeal to the public, the ASA committee has been guided solely by the engineering problems involved in specifying height limitations. The resulting height limits are more liberal than those contained in many existing codes. For roof signs, the maximum allowable height of the top of the sign above the roof is 30 feet, and for ground signs, 100 feet above the ground. Recognizing that ground signs ordinarily need not be more than 40 feet in height, the allowable limit of 100 feet will permit signs to be elevated considerably, and thus be visible, in hilly communities; for example, Pittsburgh, Kansas City, Seattle, and San Francisco. From an engineering standpoint, the limit is reasonable since structures of this increased height can also be made safe, provided due attention is given to the specified increased wind pressures at higher elevations and advantage is taken of sloping ground in the necessary precautions with respect to bracing and anchorage design.

Wind Loads

The sections of the new standard that are concerned with wind loads result from analysis of all data,

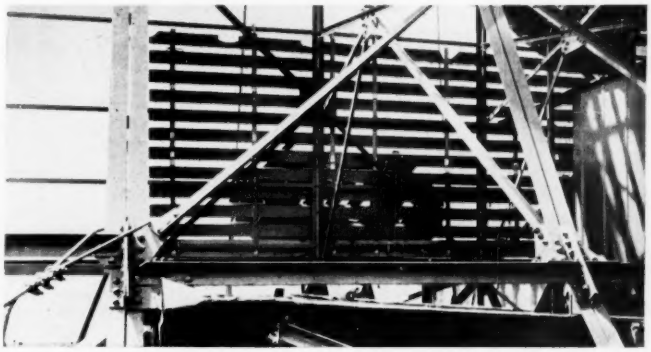
American Standard Building Code Requirements for Signs and Outdoor Display Structures, A60.1-1949 is available from the American Standards Association, Incorporated at 50 cents a copy with a discount on quantity orders exceeding 25 copies.



Outdoor Advertising Association of America

Spectacular (above, left) at Randolph Street and Michigan Avenue, Chicago, is designed to comply with safety regulations for signs. Detail (above, right) shows box-channel construction of individual louver sections; channels carry cable to neon background tubing. Louver design (below, right) has openings, designed to decrease wind resistance to permissible levels during Windy City's gales.

available both from older studies as well as from more recent research in meteorology and aerodynamics. In the tabulations of wind pressures and heights, cognizance is taken of unusual loading introduced when the face of a sign is not a solid surface. In developing the tabulated values for wind pressures for signs of different heights, the committee cooperated with the sectional committee responsible for the preparation of the American Standard Building Code Requirements for Minimum Design Loads in Buildings and Other Structures, A58.1-1945. One minor difference in the tabulations of wind pressures given in the two standards is expected to be harmonized when a revision, now underway, of A58.1-1945 is completed later this year.



Plastic Materials on Signs

For the first time in a nationally recognized standard, it is believed, comprehensive requirements have been provided to cover the use of combustible plastic materials on signs and outdoor displays. Careful study by the committee indicated that no new hazards would be introduced if plastics that are non-explosive and that burn no faster than wood are permitted. In line with this decision, the committee has rigidly defined the types of plastics that may be used as those which burn no faster than 2.5 inches per minute in sheets of 0.060 inches in thickness when tested in accordance with ASTM Standard Method for Test for Flammability of Plastics over 0.050 in Thickness (ASTM D 635-44).

To make this definition effective, the committee has set down, in Section 10, limitations on the areas of signs whose surfaces are made from plastics and the proportion of the areas of signs that may be made of plastics where only part of the surface is a combustible plastic. These requirements are somewhat more liberal on the use of plastics than the codes of many cities now permit, but are not as liberal as representatives of certain manufacturers of plastic materials have requested. Further, because the use of plastics on signs is comparatively new, in some cases permission from the building official is required. For ex-

ample, on signs over 2000 square feet in area, constructed of combustible materials, permission is required if plastic materials are to cover more than 575 square feet on a ground sign or more than 350 square feet on a roof sign. Presumably compliance with these latter requirements would mean consultations with the building department when preliminary plans are available, in advance of the preparation of final plans and specifications on which a permit to erect would be requested.

Fees and Bonds

Although recognizing that governmental agencies administering building codes frequently require fees for licenses, permits, or other legal clearances, the ASA has believed any attempt to set down provisions on such matters in American Standards would be inappropriate for a private agency and perhaps misleading also because of variations in administrative practices. However, several American Standards concerned with building codes present discussions of these subjects in appendices, as does this new standard, which presents two items in the appendix on fees and bonds.

The discussion on bonds and liability insurance is particularly pertinent to the standard on signs and outdoor display structures because of the particular hazards involved. Municipalities frequently recognize these hazards by requiring bonds to indemnify and save harmless the city from any expenses, judgments, or damages which the city may incur or suffer by reason of the granting of a permit to erect a sign. Extensions of the bonding provisions in some cities require the owner of the sign to pay all judgments for damage that result from collision with or the falling of such signs. Additional and special requirements for bonds and liability insurance are required in some localities from an individual or a firm, before permission to engage in sign erection is granted.

The new standard has been published as a 16-page pamphlet. Its contents include definitions; general provisions; a section on design features including wind loads, earthquakes, allowable stresses, and materials; five sections on various types of signs according to physical location; electrical equipment; and limitations on use of approved combustible plastics. An appendix of two pages—not a part of the standard itself—discusses some of the requirements and presents additional information that may be helpful to the user of the standard.

Rollcall of Committee A60

Twenty national associations and technical societies, including highway and building officials, municipal organizations, sign manufacturers, and safety groups, are represented on the Sectional Committee on Building Code Requirements for Signs and Outdoor Display Structures, A60. The committee is sponsored by the American Municipal Association and the Outdoor Advertising Association of America, under the procedures of the American Standards Association. Albert H. Hall, Executive Director, National Institute of Governmental Purchasing, Inc, co-author of this article, is chairman, and W. F. Hurd, General Outdoor Advertising Company, is secretary. H. M. Lawrence, also co-author of this article, and Materials Engineer on the staff of the American Standards Association, acts as secretary of the Building Code Correlating Committee, under whose jurisdiction the work on signs and outdoor display structures is being done.

Members of the committee are:

American Association of State Highway Officials, *H. E. Hilts*
American Highway Sign Association, *Thomas C. Waldron*
American Institute of Steel Construction, *T. R. Higgins*
American Municipal Association, *Morgan Strong*
American Public Works Association, *Allan H. Rogers*
American Society of Civil Engineers, *M. N. Quade*
Associated Factory Mutual Fire Insurance Companies, *H. A. Sweet; R. C. Corson (alternate)*
Association of Casualty & Surety Companies (Accident Prevention Department), *Roger T. Waite*
Building Officials Conference of America, Inc, *B. J. McKelvey*
Electric Light & Power Group, *C. M. Fife; H. E. Kent (alternate)*
National Association of Real Estate Boards, *Seward Mott*
National Board of Fire Underwriters, *C. T. Bissell*
National Electric Sign Association, *E. G. Clarke; J. D. Traylor (alternate); E. D. Bolton (alternate)*
National Fire Protection Association, *Roger T. Waite*
National Lumber Manufacturers Association, *Frank H. Alcott; John G. Shope (alternate)*
Outdoor Advertising Association of America, Inc, *W. F. Hurd; Karl L. Ghaster (alternate)*
Pacific Coast Building Officials Conference, *Hal Colling*
Porcelain Enamel Institute, *Edward Mackasek*
Traffic Audit Bureau, Inc, *V. H. Pelz*
Member-at-large, *Albert H. Hall*
Ex-officio, T. I. Coe, chairman, Building Code Correlating Committee; Morgan Strong, vice-chairman, Building Code Correlating Committee; J. H. Courtney, technical secretary, Building Code Correlating Committee

Britain Honors Dr Jones

The man who for many years has served as chairman of the Sectional Committee on Standardization in the Field of Photography, Z38, has just been given the highest award of the Royal Photographic Society of Great Britain. Dr Loyd A. Jones, head of the physics department of the Kodak Research Laboratories, has been awarded the Society's 1948 Progress Medal for his contributions to the use of photographic sensitometry in the manufacture and control of photographic materials.

To Promote Uniformity in Incandescent Lamps

By Preston S. Millar

IT is of much importance to the public that incandescent, fluorescent, and other lamps fit into lamp holders and equipment. In the United States there has been for years, under informal procedure, a good degree of standardization on lamp dimensions and electrical characteristics. However, with the complications introduced by the increasing use of fluorescent lamps and with this new competition, lamp standardization assumed an importance that justified the organization of sectional committees.

To insure that lamps are interchangeable mechanically and electrically, when that is desirable, and are not interchangeable, when diversity is desirable, is the task undertaken by these sectional committees. There are three: C78—Standards for Electric Lamps; C81—Standards for Lamp Bases and Holders; C82—Standards for Lamp Ballasts. Work is coordinated through liaison membership.

The Committee on Standards for Electric Lamps, C78, whose activities started in 1946, has developed and secured approval for 44 standards for incandescent lamps. In addition, 25 proposed standards for fluorescent lamps have been issued for trial and criticism during the year 1949. These were developed by subcommittees under the chairmanship of L. E. Barbrow of the National Bureau of Standards, for incandescent lamps, and George L. Diggles of Electrical Testing Laboratories, Inc, for fluorescent lamps.

Sectional Committee C78 is composed of eight producers, six consumers, and eight general interest representatives. This insures participation on the part of representatives of manufacturers, who are closest to the problems involved; of consumers, who have to live with the products; and of people with general interest, who are acquainted with the problems in a general way if not in so much detail as the other members. The committee meets from time to time to make provision for and to review the work of the subcommittees, upon which most of the burden of detail in standards has fallen.

The work of this committee exemplifies the fundamental purpose of standardization under ASA procedure in that it provides agreed-upon guides for manufacturing purposes. No question of certification or labeling—that introduces complexities into the work of some other ASA committees—enters into C78's problems. This is perhaps because the standards are of dimensions and electrical characteristics rather than of performance and quality.

Mr Millar is president of the Electrical Testing Laboratories, Inc, and chairman of the Sectional Committee on Standards for Electric Lamps, C78.

Effectiveness in the work of this committee and widespread use of the standards by the lamp industry will effect economy in the distribution of lamps and will promote convenience and economy for lamp users.

For list of these C78 standards and their prices, see page 165.

U. S. Delegates to Attend International Screw Thread Meeting

American industry has decided to take an active part in the work of the committee on screw threads of the International Organization for Standardization (Technical Committee ISO/TC1. This decision was made by unanimous action of Sectional Committee B1 on Screw Threads, sponsored by the American Society of Mechanical Engineers and the Society of Automotive Engineers under the procedure of the American Standards Association. The committee asked the American Standards Association to appoint delegates to a series of meetings being held by the international committee at Paris, France, June 28-30. The Swedish national standards body, which is in charge of the secretariat of ISO/TC1, is arranging the meetings, with the French national standards body acting as host for the sessions of the international technical committees.

Upon recommendation of Sectional Committee B1, the American Standards Association has appointed the following official delegates to the Paris meetings:

George S. Case, chairman of the Board, Lamson & Sessions Company, *chairman*

Irvin H. Fullmer, National Bureau of Standards; secretary of the Interdepartmental Screw Thread Committee

W. F. Gourlie, Standards Engineer, the Sheffield Corporation

R. F. Holmes, A-C Sparkplug Division, General Motors Corporation

John Gaillard, mechanical engineer, ASA staff, *technical secretary*

The sectional committee is sending this delegation with instructions to propose international unification of thread systems on the basis of the unified system recently agreed upon by the United States, the United Kingdom, and Canada. This proposal concerns not only the nominal dimensions of the threads but also thread tolerances. Under ISO procedure, thread tolerances are handled by a separate technical committee—ISO/TC19. The secretariat for this committee is held by the Swiss national standards body. The Paris meetings will be combined sessions of ISO/TC1 and ISO/TC19.

Other proposals for international unification have been submitted to the ISO by the national standards bodies in Sweden and Norway; and a fourth proposal has been developed by a Swiss engineer.

To Increase Your Office Efficiency

Offices, too, can profit by standards — by reducing the pressure of

By Vaughn Fry

Standards Open New Avenues of Approach to a Problem

THE basic reason for setting standards is to save money—in terms of reducing waste and gaining greater satisfaction; in terms of simplified and clarified office operations; in terms of safeguarding personnel and property, reducing injuries, fatigue, breakage.

Standards are specified methods and conditions, or measures, for objects and performances.* They are ways of doing things, establishing conditions under which things are done—or they are yardsticks for determining the relative qualities of items and actions.

They are used as patterns for the solution of recurrent problems, or for the attainment of predetermined objectives, or both. Once a mold has been cast, it is not necessary to throw it away and build a new one to produce the same product when it is again needed. Also, through the use of standards the efforts for doing a job are channeled into the most direct approach to it.

They are adopted as the result of careful evaluation of the best available data by the interests involved. In other words, they are based on the findings obtained through careful research and coordinated through the efforts of those best informed and most concerned with their adoption.

They are in written form. Too many so-called "standards" are only mental impressions, prejudices, or half-conceptions. The cardinal rule is to set them down in writing to see how they stack up and to preserve consistency of application.

Effectiveness—the ability to produce—is the measure of success. Standards can multiply the effectiveness of your efforts, as well as the effectiveness of your staff, your office, and your company, by both arithmetical and geometrical progression.

* Based on a definition developed with R. E. Shull, Socony-Vacuum, New York City, former chairman of Office of Standards Project X2.

Standards Open New Avenues of Approach to a Problem

Standards provide a pattern for cutting waste, improving services, and reducing costs by offering a guide for repetitive operations. They provide shortcuts for in-service training; and by enabling measurement and control of paperwork and personnel, they serve as speedometers, traffic lights, and bridges to accomplishment. They make it possible to establish job incentives which in some cases produce dollar rewards to the worker or at least produce job satisfaction and personal advancement, mentally and materially.

They Make It Possible for You to Give More Attention to New Problems—or New Phases of Old Problems

Every time you can answer a question by saying "yes" or "no" correctly, you have saved time for yourself and everyone else. The basis for your answer is your knowledge and experience. Standards represent greatly amplified experience, refined and condensed to fit problem situations. They do not provide automatic answers, but they can cut down the time and effort necessary for you individually to arrive at decisions. They can make you more effective in point of time. Here are some examples of different types of office problems to which these principles apply:

(a) A recurring problem at one location—

Examples of this type of problem include an employment application form, progress reports, requisition, standard catalogs to advise everyone of best equipment, or supply time cards, job classification for salary comparisons, smoking practices;

(b) A single problem which occurs at more than one location

For example, methods and practices to be followed in opening new offices in several cities, including office layout and equipment, lighting, air conditioning, sanitation arrangements, pension plans;

(c) Prevention of the recurrence of a specific problem or shortcoming

This might include the problem of printing paper that allows "show through", selection of carbons and weight of paper to assure legible copies, general office procedures, scheduling lunch periods, setting up regulations for sickness or time off;

(d) Prevention of anticipated problems

Through foresight in setting standards, excessive noise in a new machine room which would result in employee fatigue can be prevented; correct furniture can be selected to permit expansion; correct plate widths for typewriters would be chosen; binders that can be expanded provided; and even fire regulations taken into consideration;

(e) Prevention or reduction of confusion resulting from differing practices in nomenclature, methods, or organization

As former staff director of Research and Standards, National Office Management Association, Mr Fry has been close to the work on office standards, sponsored by his association under the procedure of the American Standards Association. His experience with this project is the basis for his conviction that standards can be a tool for the success of an individual or a company by increasing the effectiveness of their operations. Although written with office management specifically in mind, Mr Fry's analysis has an application to the problems of all management. Perhaps some of his statements may strike at one of your problems.

Mr. Fry is now editor of the NOMA Forum and is in charge of public relations for NOMA.

And Multiply Your Effectiveness

work, by re-using a practical idea, by prescribing stock supplies and equipment

Some of the problems actually handled in which standards have helped to prevent confusion include the selection of standard size cards for office records, methods of compiling production statistics, time studies, job titles and descriptions, business machine classification, styles of bank checks, and payroll methods.

Standards Can Improve the Quality of Your Output by Reducing the Pressure Under Which You Live and Work

Some of the elements contributing to work pressure include not enough help, or too much bad help; obsolescent methods, organization, and work facilities; extremes in peak and valley workloads; work duplication. Some of these elements will always be with us. For example, there will always be "bad" help—often, too little help. Turnover of personnel will always cut into that resource of an organization represented by the knowledge an employee gains on his job and add to the pressure on those who remain. But a great many elements creating pressure can be eliminated or reduced in importance by the setting of office standards.

Whether it is for a filing method or a writing pen, a standard can give you a point of reference—a "minimum specification." With this head start you can come closer, more rapidly, to determining whether your ways and tools for doing things should be continued, modified, or abandoned.

Contrary to the opinion of many, a standard does not necessarily mean a new investment. It may on the contrary cue you to a need for simplification. Hand posting may win over machine posting, for example, after you have studied your operations with the standards microscope.

In helping to eliminate the worst effects of peak and valley workloads, employee work versatility is a valuable commodity. It can either be hired or developed, and standard tests and records organized to summarize these talents are shortcuts to improving production and smoothing the work load curve. Charting of load patterns also helps to give an historical expectation of workload, and department organization patterns facilitate mobilization for emergencies. The understanding of equipment production potentials gives reserve factors that can be used in emergency periods of peak loads. In each case mentioned here the existence of an office standard will not only increase the probability that the workload curve can be smoothed, but also will save quite an amount of time in doing it.

It is difficult in even a small office to be sure that there is not an overlapping of performance that represents pure waste effort. In a large office the problem is many times amplified. Office standards describing, measuring, and evaluating jobs, standard organization charts, flow process charts, production statistics, can all contribute to the elimination of duplication of work, and, therefore, to an increase in actual productivity.

Your problem may be due to the fact that management has an improper concept of your job. Perhaps you have been a poor salesman of realities. Undoubtedly, standards can improve your salesmanship because they substitute universally developed, evaluated, and accepted facts for what otherwise might be considered to be only your own personal beliefs and opinions.

Standards Preserve and Perpetuate "Corporate Memory" and Its Attendant Values—

It has been said that corporations have extremely short memories. Standards, which represent what is "known" and are available to all who have use for them at any time, are corporate memory. Every time a 25-year man is retired a vast amount of "corporate memory" retires with him. Standards are devices to cancel the unwanted aspects of his retirement.

Standards Are Practical Applications of the Principles of Efficiency—

Fletcher Durell in *Fundamental Sources of Efficiency* cites three principles as the foundation of efficiency: (1) Re-use; (2) The unit and multiplier; (3) Uniformity. "Re-use" refers to re-using an object or an idea—yours or another's. The "unit and its multiplier" means using an object or an idea many times simultaneously, rather than in succession. (When a standard method developed for one of your branch offices is used every day, that is re-use. The method is then introduced to several other branch offices. The unit—the method—is used simultaneously. It is being used in more than the original office, so the unit is multiplied. The unit-multiplier principle is re-use in space. Re-use, itself, is related to time.) The third element, Uniformity, is a constant principle of efficiency. But, unlike the other two, it is not in itself an objective.

Robot offices are not the end product desired by the setting of standards. Where a degree of uniformity is a semi-accidental by-product and it contributes to over-all efficiency, it is good. But where such tendency to uniformity stifles progress, initiative, job challenge, and thus eliminates the necessary element of competitiveness, it should be avoided.

This "uniformity" concept as applied to the office is the principal difference between the office and the factory in setting of standards. A screw thread is most successful when it is most nearly uniform in relation to other screw threads with which it is intended to be interchanged. A letter is least successful when its "threads" duplicate other letters.

For both office and factory, these criteria must endure:

To be successful, standards must result in (1) The creation of significant economies; (2) The reduction of confusion; (3) The safeguarding of life and property.

TO INCREASE YOUR OFFICE EFFICIENCY

Groundwork is Laid For Office Specifications

Activities in subcommittees show concrete results pointing to standardization of office materials

THE Office Standards Project under the sponsorship of the National Office Management Association is beginning to point in the direction of concrete results, despite the fact that it has been working under hardships, reports its secretary, C. E. Hilton, engineer on the staff of the American Standards Association. For 13 months the main committee—the sectional committee—has been without a chairman, leaving responsibility for the active technical work largely to the five subcommittees. Three of these subcommittees have been relatively active during the last year, and it is here that the possibility of concrete results can be seen.

Subcommittee 2 on Office Papers

Draft standards for three grades of sulphite bond papers and a proposal on basic sheet sizes for bond papers and index bristols have been developed by a subgroup of this subcommittee. These proposals have received wide circulation within the paper industry, having been sent to the 83 known manufacturers of sulphite bonds and index bristols. Although the subgroup has made no official tabulation of the replies received, the results indicate that the manufacturers largely oppose, in principle, the development of quality specifications on the grounds that they tend either to upset the manufacturer-consumer relationship or establish values which have little bearing on the quality of the product. A small number of mills, however, expressed approval of the specifications and a willingness to cooperate in their refinement. Since only nine of the 20 subcommittee members have commented on the specifications the subgroup has delayed tabulation of replies until a broader cross section of the consumer views has been obtained.

Subcommittee 3 on Forms, Records, and Procedures

Project studies are under way on business forms, symbols for procedural studies, procedure for maintaining forms control, nomenclature used in filing, and a system for filing catalogs. In addition, the Business Forms Institute has about completed the preparation of recommendations on sizes of all types of continuous forms and is planning to submit its recommendations to this subcommittee for possible adoption. A joint subgroup on sizes of cut forms has been organized by this subcommittee and includes representatives from the Subcommittees on Office Equipment and Office Papers.

Subcommittee 5 on Business Machines

Subgroups have been created on the following: Typewriters; Accounting, Adding, Calculating and Punched-Card Machines; Dictating, Transcribing and Communication Machines; Reproducing and Paper Handling Machines; and Addressing and Mailing Machines. In addition to features found on the individual machines, each subgroup has decided to attack the common problems of lengths of cords and types of plugins, identification plates, spacing of lines and characters, and location of serial numbers. The subgroup chairmen are presently seeking technical personnel and assistance from the manufacturers of these machines.

A job of great potential impact has recently been referred to this subcommittee by one of its members, the U. S. Bureau of the Budget. It stemmed from the fact that the Government has been asked to adopt a simplified alphabetical keyboard for its more than three-quarters of a million typewriters. The Bureau of the Budget has taken the position that no such change can be contemplated, despite recognition of the need for simplification, until such time as the Business Machines Subcommittee has objectively studied the relative merits of the various simplified arrangements that have been proposed.

Subcommittee 1 on Office Equipment

Although the subcommittee has held no meetings during the past year, individual members are continuing attempts to coordinate the sizes of metal and wood desks and tables, and are pressing for the development of desk-top materials having high reflection factors which will lessen eye strain through the reduction of contrast and yet be susceptible to easy maintenance. Although the Wood Office Furniture Institute has submitted its Standard Wood Finishes for possible adoption as an American Standard, pertinent technical specifications needed for checking conformance are necessary and are under development by the WOFI before the subcommittee can give further consideration to the proposal.

Subcommittee 4 on Office Supplies

Individual members of this committee are attempting to interest the manufacturers of erasers, adding machine listing tapes, inks, loose-leaf binders, and index cards in the standards project. Varying degrees of cooperation have been secured but, in general, it can be said that the manufacturers of office supplies are not sympathetic to national standards for their products, and a great deal of convincing is yet to be done by those consumers and distributors who consider them desirable. Recent discussions with the Marking Device Association have resulted in its offering to act as a subgroup for the development of standards covering rubber hand stamps, stamp racks, inks and pads for rubber and metal marking devices, metal frame hand stamps, hand numbering machines (metal type), and seal presses.

Of the greatest importance for the future success of this project is the need for a growing realization that the principles of industrial standardization on a national scale are just as applicable to the business office as they have been for 30 years to the shop and factory, representatives who are taking an active part in the work of the committee point out.

Building Codes—

How They Stand and Where They're Going

National and local organizations feel an increasing urgency for unifying ad revising building codes. Harmonization of requirements of various groups is a pressing need

BUILDING code revision and unification seems to be assuming a new sense of urgency among national and local organizations concerned with building and housing, and among the general public.

Two problems confront them: Unification of local codes through consistent adoption of national standards; and harmonization of building code requirements of the various national organizations.

Although the provisions of many national building codes and standards find their way in whole or in part into local laws and ordinances, there is no consistent uniformity of acceptance, says F. Stuart Fitzpatrick, manager of the Construction and Civic Development Department, Chamber of Commerce of the United States. Many local codes vary widely from nationally recognized standards, thus barring materials or methods which otherwise would undoubtedly be nationally acceptable.

Small-Quantity Production Increases Costs

As a result, the manufacturer must diversify his output, producing each item in smaller quantity and often therefore at higher cost. His market area may be reduced where certain communities prohibit the use of certain materials or methods; for example, plywood, light-gage steel, armored cable, and welding.

Widely varying local requirements within the market area of the distributor may cause a complex inventory problem.

If the local code requires that the industrial or commercial user (the builder) purchase an unstandardized item which from the standpoint of the manufacturer or distributor is in small demand, or if the code calls for an unreasonably high level of performance, it is likely to add to costs, and to cause delay.

Codes Vary with Climate and Geography

Regional differences in climate and geography are one reason for variance in codes. However, these difficulties can be largely overcome in national standards by establishing regional requirements, with variations for different areas.

According to B. T. Fitzpatrick, general counsel of the Housing and Home Finance Agency, one of the most important and neglected aspects of building code improvement is the development of administrative law and procedures which would make it as easy for municipal code officials to say "yes" as to say "no" to proposals to use new materials and new methods of construction.

The difficulties faced by communities in putting nationally recognized building codes into effect in state laws and local ordinances and keeping these laws up to date has been under study recently by an ASA Committee on Model Laws and Ordinances. (See "Can Technical Requirements in Local Laws Legally Be Kept Up to Date?", April STANDARDIZATION, page 103.) This committee is asking for comments and suggestions on its analysis of the legal situation. A solution to this legal problem would undoubtedly result in a greatly improved record in up-to-date building code requirements.

Recently, attention has been given to the problem of coordinating the requirements of standard building codes being prepared by various national organizations. The second of a series of meetings was held in Washington in March under the auspices of the National Board of Fire Underwriters to discuss the situation. Participating organizations include the American Standards Association, the Building Officials Conference of America, the Southern Building Code Congress, the National Fire Protection Association, Underwriters' Laboratories, the National Bureau of Standards, and the Housing and Home Finance Agency.

Understandings were reached that may lead to concurrence in many definitions that appear in building codes. At further meetings classification by occupancies and basic types of construction will be studied.

Recent building code activities of some of the important national organizations are discussed below.

National Board of Fire Underwriters

The 1949 edition of the NBFU National Building Code, its sixth revision since 1905, includes widely used approved American Standards and nationally recognized standards of trade associations. It is said that practically every city in the country has utilized the code, which until 1928 was the only one of national scope, in framing or revising its own code.

A "performance code," it allows the use of any material, type of assembly, or style of architecture. A new clause provides that all existing buildings must conform to certain minimum requirements for safety-to-life. It defines structures which need correction and determines the manner in which enclosure of vertical openings and other safety measures shall be applied.

The code also calls for provision for adequate light and ventilation. It recognizes increased allowable stresses in lumber and steel; new modular dimensions which help ease construction costs; prefabricated flues; and wider use of fire retardant impregnated lumber. Requirements include automatic sprinklers in windowless buildings, fireproof or semi-fireproof

construction for open-air garages. There is also a modernized section on motion picture theatres and auditoriums in buildings.

The NBFU code also is edited to facilitate its adoption by reference by any city in the nation, enabling municipalities to avoid the heavy cost of publishing codes. According to its model enabling ordinance any city may adopt the code by filing three copies with the local city clerk, and 25 copies can be obtained without cost to such a city.

The NBFU has also issued an Abbreviated Edition of its code, suitable for many small municipalities, particularly where there is no extensive industrialization and no buildings higher than five or six stories.

Pacific Coast Building Officials Conference

The most recent edition of the Uniform Building Code of the Pacific Coast Building Officials Conference was published late in February. The result of three years' study of the 1946 edition by municipal officers in 500 cities operating under the Code in the United States, Canada, Alaska, and Hawaii, this document provides for the use of all new materials and types of construction which meet the minimum standards of safety to life. It is also available in a modified edition. The same group offers a Dwelling House Construction pamphlet which is a building code for wood frame residential construction; this includes masonry and concrete block requirements.

In addition, the PCBOC will shortly publish volume two of its code, a book of standards referred to in the code itself. A second edition of Modern Building Inspection is expected to be available in about three months.

Building Officials Conference of America

The Building Officials Foundation, a group associated with the Building Officials Conference of America, recently published a so-called abridged building code designed for use by smaller residential communities. This is a simplified version of the master building code on which the BOCA has been working for several years, and which is expected to be ready sometime late in the year.

The BOCA program has been actively directed by building officials of many of the larger municipalities in the country through their participation in the work of the main BOCA committee and numerous subcommittees. A first draft was made available to industry for comments and criticism in 1948, and is now being revised accordingly. The two years of development of these codes is said to have cost the Foundation $75,000.

Housing and Home Finance Agency

The recently formed Division of Standardized Building Codes and Materials of the HHFA plans a double-barreled attack on present antiquated codes: First, by developing and promoting acceptance of model building codes based on improved standards; second, by developing standard dimensions of parts and materials to minimize wasteful fitting. This group is using universities and other government agencies, such as the National Bureau of Standards and the Forest Products Laboratory to do a large part of its research. Its standards are to be based upon the application of engineering principles determined as the result of scientific tests and research, rather than empirical knowledge. They will be issued in suitable form for direct incorporation into building codes.

HHFA's first major action under this program was the drafting of suggested model legislation which would enable municipalities to avoid the excessive cost frequently involved in publishing lengthy codes or revisions of codes, as many state statutes now require that they do. The proposed statute, which is included in the Council of State Governments 1949 program of suggested legislation, states that a city may adopt a model building code merely by properly identifying it in the ordinance and making it available for public inspection.

HHFA is also issuing a series of reports to the homebuilding industry on the practical results of technical research in materials and methods.

ASA Building Code Correlating Committee

The Building Code Correlating Committee of the ASA believes that its progress in the building code field is more likely to result from a program of standards for those subjects that are customarily treated in building codes, rather than an attempt to develop an entire code *de novo*. As a result there are now 25 American Standards, not all under the supervision of the Committee, available for incorporation, either directly or by reference, into building codes.

National Bureau of Standards Surveys the Building Code Situation

Recent analysis of the present status of building codes in municipalities of 2500 and over by the Building Technology Division of the National Bureau of Standards reveals that most of them have not been overhauled for some time. Forty-five percent of the cities which replied to the Bureau's survey have codes more than 15 years old, and 73 percent have not been overhauled in more than five years. Of course, these figures are not completely accurate because amendments have in some cases been added to modernize a code without changing its date; on the other hand, some outdated codes are reissued under a later date without critical reexamination.

No type of building regulation applies in 29 percent of the municipalities, according to the NBS report. Some cities do not have codes but do have rudimentary ordinances requiring permits for building, or setting geographical limits within which some types of combustible construction may not be erected. Others use state regulations.

Some of these localities, of course, have served as proving grounds for new materials, construction methods, and designs. However, the absence of codes represents a hazard to public safety and often to economic interests.

An encouraging note is provided by the information that almost 8 percent of the municipalities surveyed are revising their codes, indicating appreciation of engineering advances.

Age of Dated Codes

Age Group in years	Number of Cities	Percentage
Under five	574	27
6 to 10	366	17
11 to 15	244	11
16 to 20	377	18
21 to 25	327	15
Over 25	264	12

Cities with Prospective Changes in Building Codes

Status of Code	Number of Cities
Being revised	213
Revision planned	32
Being drafted	50
Drafting planned	9

Presenting—

A Roundup of Activities of Building Code Committees

Building Code Correlating Committee is told of increasing use of American Standard building code requirements in many existing codes. Sectional Committees report on status of work

Increasing and widespread use of American Standard building code requirements was brought to the attention of the Building Code Correlating Committee of the ASA at its annual meeting in March. In addition to inclusion of American Standards in many existing codes, they are also being noted and referred to in text and reference books, said G. N. Thompson, retiring chairman of the committee.

Reports from the Sectional Committee chairman show the following status for those American Standards under the supervision of the BCCC.

Building Exits Code, A9—

Sponsor: National Fire Protection Association

The latest revision and ninth edition of this well-known code, a handbook and guide to all concerned with means of egress from buildings, was approved as American Standard March 18. The program of the sectional committee, which has been in existence for many years as the NFPA Committee on Safety to Life, includes the development of requirements for building exits that will be suitable for adoption by municipal and state agencies, either through direct incorporation into codes or adoption by reference. It is hoped that work on this second standard can be commenced this year.

Signs and Outdoor Display Structures, A60—

Sponsors: American Municipal Association; Building Officials Conference of America

A new American Standard, approved in April, is covered in an article on page 000 of this issue.

Administrative Requirements for Building Codes, A55—

Sponsors: American Municipal Association; Building Officials Conference of America

More adequate provision for the use of prefabricated construction was one of the important points included in the revised recommendations for minimum requirements for administration of building codes contained in American Standard A55.1-1948, approved in December, 1948.

Grandstands, Tents, and Other Places of Outdoor Assembly, Z20—

Sponsors: National Fire Protection Association; Building Officials Conference of America

A revision of Building Requirements for Grandstands, Tents, and Other Places of Outdoor Assembly, Z20.2 was completed and approved in January. At a meeting of the sectional committee in January a consolidation of American Standards Z20.1-1941, Building Code Requirements for Portable Steel and Wood Grandstands, and Z20.2-1949 was proposed, and a draft was accepted by the committee. It has been submitted to the sponsors with the hope that it will be presented for approval by them later this year.

Fire Protection and Fire Resistance, A51—

Sponsors: National Bureau of Standards; National Board of Fire Underwriters; National Fire Protection Association

The National Lumber Manufacturers Association is sponsoring a research program to develop added data on the rate of flame spread in combustible materials used as interior finishes, which is of interest to Subcommittee I. It is planned that a meeting of the subcommittee will be held in Chicago to view the tunnel test for flame spread developed by the Underwriters Laboratories. A new draft of a proposed standard on interior finishes is being prepared by H. M. Robinson, chairman of Subcommittee I.

A report on roofing submitted by Subcommittee II in September 1948 has been authorized for general circulation as information, and Subcommittee III's report on protection of openings will be sent to letter ballot of the sectional committee.

Height and area limitations have been actively studied by two subcommittees for over three years, but agreement in all respects on these essential features of building code requirements has not as yet been reached.

Data on fire-resistive ratings for building materials and constructions obtained by the NBS and other research organizations is being correlated by Subcommittee V. The need for further research has become evident, but arrangements for carrying on this work have not as yet been made.

Recommendations on definitions and classifications of building construction are to be circulated to the sectional committee. They will also be circulated to Committee A54 on Fire Extinguishing Equipment because the types of construction affect recommendations for this equipment.

Building Code Requirements for Excavations and Foundations, A56—

Sponsor: American Society of Civil Engineers

Recent revisions on excavations and foundations in the New York City Building Code will be studied by this committee with a view to modification of a draft for a proposed American Standard, already prepared. Comments from the ASCE on the proposed standard are now before the committee. It is hoped this will be completed during the coming year.

Building Regulations for Reinforced Concrete, A89—

Sponsor: American Concrete Institute

The committee is studying recent developments in cement and concrete technology, including research on steel reinforcement, looking toward extensive revision of the present standard, the well-known code of the ACI (ACI 318-46) which was approved in 1948 as American Standard A89.1-1948. This standard has been widely accepted and incorporated into building codes. In addition to changes in the technical content, the next edition may include some changes in the method of presenting the requirements.

Fire Tests of Building Construction and Materials, A2—

Sponsors: American Society for Testing Materials, Fire Protection Group; National Bureau of Standards

The reaffirmation of American Standard Method of Fire Tests of Door Assemblies, A2.2-1942; a revision of American Standard Methods of Fire Tests of Building Construction and Materials, A2.1-1947; and the possible approval of two new tests for combustible properties of treated wood, recently developed by ASTM Committee E-5, are receiving attention by the sectional committee and the sponsors. Although these sections have not yet been completed, up-to-date standards can be obtained from the ASTM or the ASA.

Other Projects on Which Work Is Underway—

The three-year review of American Standard Building Code Requirements for Minimum Design Loads in Buildings, A58.1-1945 (sponsored by the National Bureau of Standards), conducted last year,

Roundup of Building Code Activities—(Continued)

indicated a need for revising this standard. The personnel of the sectional committee has been brought up-to-date, and a canvass inviting comments and suggestions has been made. It is hoped that revision will be completed this year.

Also under revision is the American Standard Building Code Requirements and Good Practice Recommendations for Masonry, A41.1-1944, for which preliminary drafts have been circulated. This also is sponsored by the NBS.

Work will be resumed shortly on proposed Building Code Requirements for Chimneys and Heating Appliances, A52, sponsored by the National Board of Fire Underwriters.

Standards Due for Review—

American Standard Building Code Requirements for Light and Ventilation, A53.1-1946, sponsored by the Federal Security Agency, Public Health Service and the Housing and Home Finance Agency; and American Standard Building Code Requirements for Reinforced Gypsum Concrete, A59.1-1945, sponsored by the Building Officials Conference of America and the Gypsum Association, are due for the customary three-year review.

The Executive Committee was asked by the BCCC to look into the reactivation of two projects: Building Code Requirements for Structural Steel, A57 (sponsored by the American Institute of Steel Construction, Inc. and the American Society of Civil Engineers) which has stood without review since 1943; and Building Code Requirements for Iron and Steel Other than Structural Steel, A87 (sponsored by the American Iron and Steel Institute and the ASCE). Since the American Standard Building Code Requirements for Steel Joist Construction, A87.1-1947, covers only part of the assignment of committee A87, much of its work remains to be done.

The committees on Building Code Requirements for Fire Extinguishing Equipment, A54, (sponsored by the National Fire Protection Association) and Building Code Requirements for Wood, A61, had no developments to report. However, the Forest Products Laboratory, joint sponsor of the latter project with the National Lumber Manufacturers Association, has completed a revised analysis of working stresses for timber, and has done considerable work on the preparation of code material.

For Your Convenience

Attention! users of JAN specifications:—Many times, JAN specs are the technical equivalents of American Standards. If you are geared for American Standards and are using JAN specs, look in the section "Notes" (usually lettered "H") to see whether there is a reference to the technically equivalent American Standard. It may save you time and footwork.

The Latest in B5 Series

Straight Cut-Off Blades

Dimensions for the height, length, and thickness of four types of blades are covered in the new American Standard for Straight Cut-off Blades, B5.21-1949, the most recent in the series of American Standards for small tools and machine tool elements.

The standard is for use principally in the metal working industry where single and multiple spindle automatic lathes are used, and recommends sizes of blades in general use at the present time. These blades can be used in standard or commercial holders.

"In the development of the standard some adjustment of viewpoints was necessary to get producer and user agreement," P. L. Houser, chairman of the Sectional Committee on Standardization of Small Tools and Machine Tool Elements, B5, explained. "The standard is based on correlation of existing practices. The primary purpose is to reduce the number of sizes and styles of blades that are used."

Sectional Committee B5 is sponsored by the Metal Cutting Tool Institute, the Society of Automotive Engineers, the National Machine Tool Builders Association, and the American Society of Mechanical Engineers, under the procedures of the American Standards Association.

Markings for Grinding Wheels

A revision of the 1943 edition of the American Standard Markings for Grinding Wheels has just been made available, bringing up to date this standard system of marking being followed by grinding wheel manufacturers. The new edition includes provisions that make it easier for the wheel maker to incorporate, with the standard markings, any special symbols that he may require. It also provides an alphabetical system to designate grade of hardness.

The value of the standard "lies in the fact that all grinding wheel producers are now using identical markings thereby eliminating much confusion that previously existed due to the use of several different systems within the industry," explains P. L. Houser, chairman of the Sectional Committee on Standardization of Small Tools and Machine-Tool Elements, B5, which is responsible for the development of American Standard B5.17-1949.

Both these standards are available at 30 cents apiece.

U. S. Delegation to Attend IEC Council Meetings

An American delegation will attend the meetings of the International Electrotechnical Commission June 13 to June 19 at Stresa, Italy. The members of the delegation are: Dr H. S. Osborne, American Telephone and Telegraph Company, president and chief delegate of the IEC United States National Committee; George Sutherland, Consolidated Edison Company; F. M. Clark, General Electric Company; R. G. Larsen, Shell Oil Company; and J. W. McNair, ASA staff, USNC secretary.

They will attend the meetings of the IEC Council which will elect a new president and officers for the Commission.

The Committee of Action, in effect the Executive Committee of the IEC Council, and Advisory Committees handling the technical work, will also hold meetings at this time.

The technical committees are holding their first meetings since the war. Plans for a revision of the International Electrotechnical Vocabulary, published by the IEC, will be made by Advisory Committee No. 1. Standard voltages and current ratings and high-voltage insulators will be handled by Advisory Committee No. 8, and insulating oils by Advisory Committee No. 10. Advisory Committees Nos. 17 and 22 will meet to work on switchgear and electronic devices, respectively. The present status of insulation coordination in various countries, the basis of insulation coordination, impulse insulation levels, and related subjects will be considered by Advisory Committee No. 28 on Coordination of Insulation, for which the USNC holds the secretariat.

Centralized Documentation— The Trend for Industry?

Three-day conference held by the Central Air Documents Office points out the importance of making technical data available for effective use by all organizations concerned

"Centralized Documentation" is as mouth-filling a phrase as the subject itself is comprehensive in its application to library and record-keeping problems. Library groups in the United States consider that the term "bibliographic control" expresses the idea more clearly. Under whatever name it is known, the subject itself covers all the processes and principles by which documents are classified, abstracted, indexed, cataloged, reproduced and thus made available to interested readers.

Centralized Documentation Is of Practical Importance

That the problems of "centralized documentation" have more than academic importance was brought home to a group of some 150 representatives of military and government agencies and companies with government contracts at a three-day conference at Wright Field, Dayton, April 11, 12, and 13. The conference was called by the Central Air Documents Office (Navy-Air Force) which is responsible for making available to government contractors research papers and technical data related to aeronautics. This service was set up after the surrender in Europe to get captured scientific and research data to American industry quickly for use in the war against Japan. It has been used largely for the circulation and control of classified (restricted, confidential, secret) documents. However, the work of the organization has now branched out in line with the philosophy expressed in a recent issue of the CADO Technical Data Digest:

"As machinery is becoming more complex—whether it be intended for military or civilian use—the equipment required to develop, test, and build such machinery is becoming even more complex: greater and more skills are required; expenditures in time, materials, and money are greater. Therefore, means which permit and enhance the effective use of such data are now among the prime prerequisites of our industrial mobilization."

In line with this policy, CADO is now undertaking to publish prepublication abstracts of technical papers and articles appearing in magazines both in the United States and in other countries. It also plans to offer a "give-and-take" arrangement to scientific and educational organizations. Under this policy, organizations not under contract with the government but doing important research will be put on CADO's list to receive announcements and abstracts of technical and scientific reports in exchange for copies of the significant reports and papers they issue.

Distribution of Material Is Discussed

The purpose of the April conference was to define the problems of CADO in supplying material and of the organizations using it, and to discuss ways and means of solving them. The discussions covered the Standard Aeronautical Indexing System, the Air Technical Index, miniaturization of documents, machine methods in documentation, reports standardization, and document exchange.

The Standard Aeronautical Indexing System has been set up by the Institute of the Aeronautical Sciences under contract to the Navy and Air Force to serve as a guide for the selective distribution of classified military information in aeronautics and allied fields to agencies and contractors of the Armed Services—as a distribution guide and not a cataloging system. Coordination of the subject divisions and subject sections was accomplished through personal contacts with some 2,000 experts in the country.

The Air Technical Index is the means by which the scientific and technical papers are announced to the organizations concerned. Cataloging data on six of these documents are placed on a single sheet, which can be supplied either in translucent form so that they can be easily reproduced or as card stock for use in card catalogs. These cards also include an abstract of each paper. Discussion of the problems centered around the methods used in reproducing the material, and of the type of abstract of most importance to the user.

Objections Stated On Use of Microfilm

Problems encountered in miniaturization of documents, necessary from the viewpoint of economical storage and distribution, centered around the fact that many technical men found it difficult to use microfilm and that the user organizations had to photostat the microfilm copies in full size for the use of their engineering staff. The use of "microcards" was discussed but before such cards can be used suitable and inexpensive viewers, as well as enlarging equipment to produce usable blow-ups, will have to be developed.

The use of machine sorters for selection of punched cards so that bibliographies on any subject can be supplied on request was suggested. The representative of the International Business Machines Corporation said that the equipment manufactured by his organization could be used although it is designed for accounting methods only.

One session was devoted to standardization. Some 360,000 documents of interest in aeronautics are issued annually, it was reported, and the Central Air Documents Office finds that some standardization or "normalization" is needed for processing this large number of reports for inclusion in the Air Technical Index. "The sole criterion for judging the validity of standardization will be: 'Will standardization help the user of the report without imposing an undue burden on the originator?'" it was explained.

James J. Boucher, CADO Plans and Control Office, declared that standardization should bring about greater communicability and accessi-

bility of material although critics of standardization believe that initiative would be inhibited if researchers had to conform to strict rules for preparing reports and that the time lag between the end of research and the publication of the findings would be increased. CADO's standardization requirements are that all pertinent information should be easily available and should include the title, author, originating and publishing agencies, restrictions on distribution of the document, an abstract, a report number, in addition to other standard items. Bibliographies should be standardized, for example.

Standardization can only come about through general agreement of Government, education, and industry, Mr. Boucher declared. However, as a first step, a manual on reports standardization is being made available soon by the Air Force.

The project on Standardization in the Field of Library Work and Documentation, Z39, sponsored by the American Library Association under the procedures of the American Standards Association, was mentioned. This project has been dormant since the war, but it was explained that the machinery of the ASA is available for coordination of standards on a national scale and for international cooperation when the organizations concerned are interested in using it.

Conclusions drawn by the Central Air Documents Office from this conference were:

"First, it became evident that the average engineer is becoming increasingly aware of the need for organized documentation services and is making greater use of indexes, accession lists, and catalogs. Second, and as a result of this, the library is emerging from the 'hole-in-the-corner' stage into an important component of the research and engineering departments. With this development, librarians are gradually becoming what their training had always intended them to be—not merely dispensers of written information, but advisers as to what information to get and what to do with it. Finally, considerable strides have been made in the research for better, faster, and more effective documentation by means of new reproduction, selection, and dissemination techniques."

Keeping Up With ASTM

New specifications and tests for materials and numerous revisions of existing standard tests were discussed during the American Society for Testing Materials' Committee Week in Chicago. Most of the new specifications are subject to letter ballot before final reference for action.

ASTM Annual Meeting June 27

During the week of June 27 the American Society for Testing Materials will hold 22 technical sessions and other informal sessions at its 52nd Annual Meeting in Atlantic City. In addition to these meetings, technical committees will be in session to perfect and complete work on specifications and tests already under way, and to initiate new research and standardization work.

Round table discussions and symposiums will also be held on the following topics: radiography, ultrasonic testing, fatigue of metals, soils, spot testing, testing wood poles, testing cast irons with SR-4 type of gage, ferro-alloys, steel, fuels, electrical insulating materials, quality control, textiles, adhesives, plastics, sandwich construction, evaluation tests for stainless steels, paint, Naval stores, wood, appearance, accelerated testing of bituminous materials, concrete, thermal insulating materials, water borne wastes, cementitious materials, rapid identification of metals, bituminous materials, and non-ferrous metals.

● Committee E-1 on Methods of Testing. A draft of a new Method of Test for Saybolt Furol Viscosity of Asphaltic Products at High Temperatures was reviewed by the Section on Calibration of Testing Machines and Apparatus. The new method is timely, in view of the increased use and production of asphaltic products at higher temperatures. The asphalt sample is heated to the test temperature and then poured into a Saybolt Furol viscosity tube having an elongated gallery. When the test temperature has become constant in the tube, the flow of sample from the tube is timed, until it reaches the graduation mark of the receiving flask. The time in seconds is reported to be the Saybolt Furol viscosity of the asphalt at the test temperature. The method is suitable for temperatures of 250, 300, 350, 400, and 450 F.

● Committee D-8 on Bituminous Waterproofing and Roofing Materials. Several new ASTM test methods and specifications were reported in progress: (1) specifications for insulated siding used in building construction; (2) determination of extensibility or ductility of various types of asphalts; (3) a revision of the Recommended Practice for Accelerated Weathering Test of Bituminous Materials (D 529-39 T) to improve the technique; (4) a new specification for emulsified asphalt for use in cold applied built-up roof construction. A method for deter-

New ASTM Committees Organized

Of special interest to retail and consumer groups is the work being done by ASTM to organize two new committees—one on porcelain enamel, the other on ceramic whitewares.

Test methods, specifications, and definitions of terms for porcelain enamel products will be taken up. The fact that porcelain enamel is used for a wide variety of products has convinced the ASTM that work on standard testing procedures and specifications is justified.

Last October, a new technical committee, Committee C-21 on Ceramic Whitewares, was organized. Since then, the members have been appointed, agreement has been reached on scope, and several subcommittees have been established.

Scope of the committee will include all types of ceramic whitewares, including sanitary ware, electrical porcelain, chemical porcelain, stoneware, dinnerware, and ceramic tile. Early activity will deal mainly with methods of tests and with nomenclature and definitions of terms.

mining whether an asphalt will stain paper and other materials is in an advanced stage of development.

● Committee D-5 on Coal and Coke. Results are reported, by Subcommittee IV on Plasticity and Swelling, of a cooperative test on standard samples of two widely different grades of pitch. The tests were made in the Geiseler Plastometer by 12 laboratories now using this instrument. Standardization of instrument design and further checking for reproducibility have been outlined.

Two alterations in the Free Swelling Index have been recommended for consideration: (1) that the term, "zero button," be used to designate coals which do not form a coherent mass at all, and (2) that the use of some suitable profile area measuring method replace the present requirement, wherein an operator's judgment matches buttons with standard profiles.

● Committee C-8 on Refractories. Requirements for modulus of rupture for Type G brick, included in three specifications, have been lowered from 800 to 600 psi. The specifications are C 64 and C 153 covering refractories for heavy duty and moderate duty stationary boiler service and C 106 for incinerators.

● Committee D-1 on Paint, Varnish, Lacquer, and Related Products. Changes in the Tentative Method of Preparation of Steel Panels for Testing Paint, Varnish, Lacquer, and Related Products (D 609-46 T) add provisions for packaging standard ASTM steel panels. Three procedures for cleaning or treating the surfaces are also included: (1) for testing on steel without chemical treatment, (2) for testing on chemically cleaned steel, (3) for testing on chemically treated steel.

The subcommittee on shellac recommended revisions of the Standard Specifications for Dry Bleached Shellac (D 207-35). These would delete the maximum iodine number requirement, insert new requirements for rosin and copals, and change the moisture requirement from "5.0" to "6.0" percent maximum.

● Committee D-11 on Rubber and Rubber-Like Materials. Immediate revision of the Standard Specifications for Cotton Rubber-Lined Fire Hose for Public and Private Fire Department Use (D 296-38) has been recommended by the Subcommittee on Hose. Revision of the specifications (also American Standard L3.1-1941) will bring requirements into agreement with the current Underwriters Laboratories standard.

Changes made in the Tentative Methods of Testing Rubber Hose (D 380-46 T) will permit the use of a steel caliper graduated in 1/64 in. for measuring the outside diameter of hose 1 in. or less in diameter.

The immersion test for swell and deterioration of hose will be broadened to cover the use of immersion fuels 1 and 2 and the test procedure now specified in Method D 471.

● Committee C-2 on Magnesium Oxychloride Cements. Nine proposed tentative testing or sampling methods for magnesium oxychloride cements and compositions have been presented for publication. They cover determination of specific gravity, compressive strength, transverse strength, sieve and chemical analyses, and sampling of oxychloride compositions and ingredients.

● Latest addition to ASTM technical committees is Committee E-12 on Appearance. A statement of its scope is as follows:

1. Formulating terms and definitions generally applicable for describing the appearance of engineering materials.

2. Developing, or coordinating with technical committees the development of, standard methods of measurement of fundamental and broadly general appearance properties.

3. Assisting the technical committees to improve appearance tests by advice and suggestions.

4. Reviewing and recommending approval or revision of all ASTM methods of testing, existing or proposed, involving appearance factors.

5. Serving, with the approval of the Board of Directors, as liaison agent between the Society and other organizations in matters concerned with factors of appearance.

Since the work will be basically of a correlating nature, the committee is made up of representatives from the various technical committees interested in the subject.

Book Reviews

Uniform Building Code. 1949 edition. (Colling Publishing Company, 124 West 4th Street, Los Angeles 13, California. 304 pages, indexed. Paper bound, $3.25; cloth bound, $3.75.)

Revisions to the 1946 edition, which have been approved at the 1946, 1947, and 1948 Annual Business Meetings of the Pacific Coast Building Officials Conference, form the basis of the new material in this edition. They include revised requirements covering areas, types of construction, fire-resistive provisions, and existing buildings. Subcommittees of the Conference Code Changes Committee carried on a strenuous program of meetings to weigh the merits of the suggested code revisions. Members of the subcommittees included building officials, architects, structural engineers, and materials companies' representatives.

Uniform Building Code, Short Form. 1949 Edition (Colling Publishing Company, 124 West 4th Street, Los Angeles 13, California. $1.50)

Excerpts of the basic provisions from the complete Uniform Building Code are here published in a separate 80-page document for greater convenience of users.

Test Code for Internal Combustion Engines. (American Society of Mechanical Engineers, 29 West 39th Street, New York 18, N. Y., $1.50)

This new code provides rules for the testing of all types of modern reciprocating internal-combustion engines, including gasoline engines, gas engines, and oil or dual-fuel engines, specifying the instruments and apparatus required, and giving directions for reporting the data and the results obtained.

Personnel Selection Test and Measurement Techniques, by Robert L. Thorndyke. (John Wiley & Sons, Inc., 440 Fourth Avenue, New York 16, N. Y., $4.00)

Personnel Selection includes a critical analysis of the basic logical and methodological problems involved in testing, as well as careful analysis of how to set up a testing program.

Statistical formulas are considered, since they play an important part in setting up and evaluating tests, but the author stresses the reasoning behind the formulas rather than the formulas themselves. The book covers the five basic steps the author thinks necessary for a successful personnel selection program: analyzing each job to be filled; preparing the trial tests; analyzing the results of these tests; discarding the poor tests and combining the rest into an effective measuring instrument; and administering the tests most effectively.

The author is a professor of education at Teachers College, Columbia University.

Test Code for Steam Turbines. (American Society of Mechanical Engineers, 29 West 39th Street, New York 18, N. Y., $2.00)

This is one of a series of performance testing codes being developed by the ASME Power Test Codes Committee. It includes the approved recommendations for testing of all types of modern steam turbines; complete instructions for making the necessary pressure, temperature, and flow measurements; a method of calculating and reporting tests; a check list if items upon which agreement should be reached before acceptance tests; definition of terms; description of preferred instruments; and comprehensive instructions on making corrections to test performance.

Standards From Other Countries

MEMBERS of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. The titles of the standards are given here in English, but the documents themselves are in the language of the country from which they were received.

For the convenience of our readers, the standards are listed under their general UDC classifications.

625 Techniques of Traffic Routes on Land

France

Junction Box for Electric Heating Line in Railway Cars, for Distribution Under 3000 V, NF F13-004

Mexico

Fishplates of Low Carbon Steel, DGN B31-1948
Mild Steel Plates for Railways, DGN B33-1948

Germany

Lag Screws With Square Head, DIN 5913
Chisel for Road Paving Blocks, DIN 6457

629.11 Land Vehicles. Transport Engineering

France

Tires for Light Utility Vehicles, General Table of Types and Sizes, PN R127-30
Tires for Light Utility Vehicles, PN R127-21
Tires for Light Utility Vehicles, PN R127-22
Tires for Private Motor Cars, General Table of Types and Sizes, PN R127-30
Tires for Private Motor Cars, Metric Series, PN R127-31
Tires for Private Motor Cars, Inch Series, PN R127-32
Transportation of Motor Cars by Railroad, R 191-01
Valves for Bicycle Tires, PN 327-25
Gasoline Tank Filling Hose, R 161-00
Trailer Coupling Hook, PN R411-05

651 Office Organization. Office Management

Czechoslovakia

Standard Forms for Business Papers, CSN 2100

Germany

Rules for Alphabetical Listing and Registration, DIN 5007

Hungary

Various Kinds of Office Furniture and Equipment: Desks, Chairs, Tables, Cupboards, Shelves, Etc, MOSz 3425 through 3436, 3440

667.6/.8 Paints, Varnishes, Lacquer, Polishing Materials

France

Paints, Test for Water Permeability, NF T30-017
Paints, Test for Steam Permeability, NF T30-018
Ultramarine Blue, Pigment, NF T31-003

South Africa

Specifications for Wax Floor Polishes: Solvent Type: Liquid and Paste, SABS 13-1948
Specifications for Wax Floor Polishes: Emulsion Type: Liquid and Paste, SABS 15-1948

United Kingdom

Leaded Zinc Oxide, BS 1481

669 Metallurgy

South Africa

Specifications for Alloy High Tensile Brass Ingots, SABS 18-1948
White Metals, SABS 10-1948
Printers' Metal for Mechanical Type-Casting Machines, SABS 12-1948
Brass Ingots and Castings, SABS 14-1948
Phosphor Bronze Ingots, SABS 16-1948
Gun Metal Ingots, SABS 17-1948
Aluminum Bronze Ingots, SABS 19-1948

Union of Soviet Socialist Republics

Bars of Non-Ferrous Metals and Alloys, GOST 1945-46
Metals, Method of Creep Test of, GOST 3248-46
Zinc Coating, Method of Determination of Porosity, GOST 3265-46

United Kingdom

Chromium-Molybdenum Steel Castings, BS 1461-1948
Wrought Aluminum and Aluminum Alloys, Sheet and Strip, BS 1470-1948

674 Wood Industry

Germany

Wood Working Tools, DIN 6445, 7226, 7233, 7242

Hungary

Wood Qualities, Pine, MOSz 46

Sweden

Frame Saw Blades and Mounting, SMS 1433/4

Union of Soviet Socialist Republics

Oak Wood for Manuufacture of Tanning Products, GOST 4106-48
Lumber of Coniferous Species for the Use in Manufacturing Agricultural Machines, GOST 4188-48

United Kingdom

Nomenclature of Commercial Timbers, Supplement to 881 and 589-1946
British-Made Plywood for Building and General Purposes, BS1455-1948

675 Leather Industry

Germany

Determination of Fat Extracts, DIN 53306
Test for Permeability and Shrinkage, DIN 5335/6
Test for Washability and Resistance to Perspiration, DIN 53337
Test for Flexibility and Durability, DIN 53340

676 Paper and Cardboard Industry

Union of Soviet Socialist Republics

Electro-Insulating Cardboard, Mark "EM", GOST 4194-48
Cardboard for Jacquard Loom, GOST 3246-46
Base-Paper Rolls to Receive Coat of Paint, GOST 3323-46
Impregnated Insulating Paper, GOST 3441-46
Cigarette-Making Paper, GOST 3479-46

United Kingdom

Tie-On Tag Address Labels (Other Than Metal Labels), BS1466-1948
Folders and Files, BS 1467-1948

677 Textile Industry

France

All-Wool and Mixed Fiber Blankets, Specifications, NF G34-003
All-Wool and Mixed Fiber Blankets, Special Types for Army, Navy and Merchant Marine Use, NF G34-004

Hungary

Breaking Strength of Cotton Threads, MOSz 3201
Preliminary Quality Specification for Horse Housings, etc, of Rough Mixed Wool Fabric, MOSz 4089-1

Mexico

Linen Thread for Shoe Sewing Machines, DGN A16-1948
Jeans, DGN A17-1948
Linen Cloth Called "Panama", DGN A18-1948
"Holland" Linen Cloth, DGN A19-1948
Cotton Fishing Lines, DGN A20-1948

South Africa

Code for Basic Definitions of Textiles and Textile Merchandise, SABS 04-1948

Switzerland

Shuttles, Weft Brakes, SMS 32206
Revision—Picker's Saddles, for Pick From Below, for Cotton Multishuttle Looms, Dimensions, SMS 32212

Union of Soviet Socialist Republics

Spindles for Textile Machines, GOST 3750-47
Cotton Yarn, Classification, GOST 3936-47
Flyers With Puller for Dry Spinning Frame Basic Dimensions, GOST 3938-47
Cotton Tape for Shoe Industry, GOST 4016-48
Flyers for Speed Frames, GOST 4036-48
Cotton Tapes "Lasse", "Alpac" and "Alma", GOST 4037-48
Fluted Roller for Cotton Spinning Loom, GOST 3300-46

A Report from the ESC

The Communications and Electronics Division of the Electrical Standards Committee analyzed the work under its jurisdiction and paved the way for further action, at its meeting on March 9. This Division, which shares responsibility for the work of the ESC with the Power Division, is under the chairmanship of W. R. G. Baker, representing the Radio Manufacturers Association. Its work covers the following projects

Radio, C16

Sponsor: Institute of Radio Engineers.

Chairman: V. M. Graham, Director of Technical Relations, Sylvania Electric Products, Inc.

Secretary: L. G. Cumming, Technical Secretary, IRE

This committee has been reorganized and has under consideration nine standards prepared by the IRE and ten by the Radio Manufacturers Association. The objective of the committee, Mr Graham explained, is to process standards as American Standards and to submit them for consideration by the International Electro-technical Commission for international agreement. The following standards are being circulated:

IRE Standards

IRE Number	Title
1	Standards on Electroacoustics, 1938 (Minus section on definitions which is being revised and not to be circulated at this time)
3b	Standards on Transmitters and Antennas, Methods of Testing, 1938 (Minus section on antennas; there is new revision of this. See No. 11)
4c	Standards on radio receivers: Method of Testing Frequency Modulation Broadcast Receivers, 1947
5b	Standards on Radio Wave Propagation: Measuring Methods, 1942
6a	Standards on Facsimile: Temporary Test Standards, 1943
8a	Standards on Television: Methods of Testing Television Transmitters, 1947
8b	Standards on Television: Methods of Testing Receivers, 1948
10	Standards on Abbreviations, Graphical Symbols, Letter Symbols and Mathematical Signs, 1948
11	Standards on Antennas: Methods of Testing, 1948

RMA Standards

RMA Number	Title
GEN-101	Color Code Numerical Values, Decimal Multipliers and Tolerances, July 1948
GEN-102	Preferred Values, July 1948
REC-103	Dimensional Characteristics of Phonograph Records for Home Use, October 1946
REC-110	Antenna-to-Set Transmission Line for Television Receivers, June 1947
REC-113	Vibrating Interrupters and Rectifiers for Auto Radio Frequency, 115 Cycles, April 1948
REC-116	Fixed Composition Resistors, July 1948
REC-117	Fixed Wire-Wound Resistors, July 1948
REC-118	Fixed Paper Dielectric Capacitors in Tubular Non-Metallic Cases, September 1948
REC-123	Battery Socket Patterns, December 1948
TR-101-A	Electrical Performance Standards for Broadcast Transmitters, February 1948

A proposed new scope for this committee formulated at the request of the Communications and Electronics Division and submitted to the ESC, makes changes in the Committee's activities as indicated in the Italic additions: "Nomenclature, methods of testing and or rating, specifications for radio apparatus, equipment *and components*, and dimensions to secure interchangeability where this may be found to be desirable. *Electron tubes are not included.*"

Dry Cells and Batteries, C18—

Sponsor: U. S. Department of Commerce, National Bureau of Standards

Chairman: Dr G. W. Vinal, National Bureau of Standards

Secretary: F. J. Wolfe, National Carbon Company

The committee plans to undertake a revision of the 1947 edition of this standard when the need arises, but the officers believe that there is no need for such action at the present time. According to past procedure, a new specification would be prepared in 1950 or 1951.

Standardization of Electron Tubes, C60—

Sponsor: Joint Electron Tube Engineering Council

Chairman: O. W. Pike, General Electric Company

This committee, which has just been reorganized, now has the following scope:

"Definitions, classification, methods of rating and testing, dimensions and interchangeability of electron tubes."

Some joint standards of the Radio Manufacturers Association and the National Electrical Manufacturers Association have been submitted to the committee as the basis for its work. A large number of standards from the Joint Electron Tube Engineering Council are also to be submitted.

Radio-Electrical Coordination, C63—

Sponsors: Radio Manufacturers Association; National Electrical Manufacturers Association

Chairman: Dr J. J. Smith, General Electric Company

Three subcommittees are working under Sectional Committee C63. Subcommittee 1 covers general technical problems in the field. It was reported that a good deal of work is being done in various places on radio noise meters. The University of Pennsylvania is working on a new type of noise meter. It was explained that the task of Sectional Committee C63 and its subcommittees is to coordinate the work of the various other organizations working in the field.

A comprehensive report on definitions and terminology has just been issued by Subcommittee 2 on Definitions.

Subcommittee 3 handles relations with the International Special Committee on Radio Interference (CISPR).

Acoustical Measurements and Terminology, Z24—

Sponsor: Acoustical Society of America

Chairman: Vern O. Knudsen, Dean of the Graduate Division, University of California, Los Angeles

Vice-Chairman: C. F. Wiebusch, Bell Telephone Laboratories, Inc

Six subcommittees are working under this committee on: Acoustical terminology; fundamental sound measurements; noise measurement and sound level meters; sound insulation and sound absorption measurements; audiometry and hearing aids; underwater sound measurements; vibration.

A set of acoustical definitions has just been issued for comment and study as a proposed revision of the American Standard Acoustical Terminology, Z24.1-1942. This has been done by the subcommittee on acoustical terminology in cooperation with the Institute of Radio Engineers.

Two proposed standards completed recently by the Subcommittee on Fundamental Sound Measurements have been sent to the sectional committee for letter ballot. These are a method for the coupler calibration of earphones, and specifications for laboratory standard pressure microphones. Another proposed standard is nearly completed—on a method for the calibration of laboratory standard pressure microphones.

Two approved American Standards prepared by the Subcommittee on Noise Measurement and Sound Level Meters have been in continuous use since their approval. These are the American Standard for Noise Measurement, Z24.2-1942, and the American Standard for Sound Level Meters, Z24.3-1944. In addition, the subcommittee has done a great deal of work on a

proposed Test Code for Apparatus Noise Measurement.

In studying the problem of noise levels at various locations, the committee has collected data from a number of sources on the noise levels in various locations. The subcommittee believes that this information may assist in arriving at a satisfactory decision on the noise level in any given location.

Present practices in sound absorption measurements and sound transmission measurements are being studied by the subcommittee on this subject. The subcommittee plans to have discussions of the subject at meetings of technical societies, such as the Acoustical Society of America.

A proposed American Standard on Audiometers for General Diagnostic Purposes is now before the Board of Examination of the American Standards Association for approval. The Subcommittee on Audiometry and Hearing Aids is also working on the acoustical requirements for hearing aids, as well as on four long-range problems: development of a better artificial ear coupler; standardization of external shape of acoustic impedance of earphones; determination of bone-conduction thresholds.

Release of classified information developed during the war has contributed to the work of the Subcommittee on Underwater Sound Measurements. The most urgent of its work has been in terminology for underwater sound measurement, carried on in connection with the work of the subcommittee on Acoustical Terminology.

The work of the Subcommittee on Shock and Vibration Measurement was extended recently. It had formerly included only vibration measurement.

Sound Recording, Z57—

Sponsors: Institute of Radio Engineers; Society of Motion Picture Engineers

Chairman: George M. Nixon, National Broadcasting Company

Vice-Chairman: John Hilliard, Altec-Lansing

Since the responsibility of this committee is to act as a means of coordinating the activities of technical societies engaged in standardization in this field and to provide a means of liaison between technical societies rather than to initiate standards, it is not to be expected that a large number of standards will be forthcoming from this committee, the chairman reported. Formal adoption of a standard by the technical societies is necessary before the Z57 committee can act on a standard. It was reported that the liasion activities of Committee Z57 have been helpful in the field of magnetic recording particularly. Some standards of the Radio Manufacturers Association are now before the committee.

Joint Army-Navy Specifications—

A procedure has been worked out with the Armed Services Electron Standards Agency to obtain comments from industry on proposed JAN material, the chairman of the Division reported. Under this procedure the ASESA would circulate this proposed material to industry with the request that their comments be submitted to the Data Bureau of the Radio Manufacturers Bureau. The RMA Data Bureau would then compare and collate the comments. If the comments are favorable, ASESA will be notified. If there is disagreement, an attempt will be made by RMA to reconcile the differences in conference with representatives of the Armed Services. Following general agreement, the appropriate parts of the JAN specifications will be submitted to the Sectional Committee on Radio, C16, for approval as American Standard. This procedure will cover new work by the ASESA. RMA will study existing JAN specifications and adopt as many of them as possible as RMA standards. These will in turn be submitted to Sectional Committee C16 for consideration as American Standards.

The sectional committee will undoubtedly be asked to recommend special procedures for approval on those components which are of a very high grade for special military requirements.

A Discussion Panel

"What the Catholic Administrator Should Know About Building Materials"

"What the Catholic Administrator Should Know About Building Materials," a panel discussion, is one of three sessions of a convention to be held by the National Catholic Building Convention and Exposition at the Hotel Stevens in Chicago, June 14, 15, 16. The convention is sponsored directly by St. Joseph's College in Indiana. His Eminence, Samuel Cardinal Stritch, is serving as Honorary Chairman.

The American Standards Association has been invited to arrange for the session on building materials. The chairman of the Program Committee has indicated that what is desired is a panel discussion on the possible usefulness to Catholic administrators of standards, specifications, and codes for building materials.

In response to this invitation, a panel has been set up, membership being that listed elsewhere on this page. The discussion will be opened by a short address by H. M. Lawrence, ASA's Materials Engineer, supplemented by brief discussions by each member of the panel on the services his organization makes available to the building industry. The panel members will then endeavor to answer questions from the floor on the selection and use of building materials.

In general, members of the panel will explain that what the Catholic administrator should know about building materials is, in the main, no different from what any other body or individual who spends public or quasi-public funds ought to know. They will stress the importance of using standards, specifications, and codes as guides, wherever possible, in the selection of materials.

The Program Committee for the convention has emphasized that Catholic administrators (including pastors, religious superiors of colleges, hospitals, convents, orphanages, and others) are responsible for millions of dollars worth of construction and remodelling annually. These officials all use the National Catholic Building Convention and Exposition as their meeting place to exchange ideas with each other and with the architects, engineers, and contractors who work with them.

This year's convention will have three major sessions covering the essentials of building services: Architecture, construction, and building materials.

For the session on building materials, ASA plans to show a sound slide film entitled "A Scotsman looks at Modular Coordination," which demonstrates developments in modular coordination—a technique in the design and erection of buildings that promises to lead to lower building costs. (See STANDARDIZATION, April, 1949, p. 93, for a discussion of this architectural technique.)

Membership of the Discussion Panel

National Bureau of Standards—H. R. Snoke, Chief of Exterior and Interior Coverings Section, Building Technology Division

National Fire Protection Association—J. K. McElroy, Assistant Technical Secretary, NFPA

American Society for Testing Materials—H. H. Morgan, Vice-President, Robert W. Hunt Company

American Society of Mechancial Engineers—Dexter J. Purinton, Consulting Engineer and Production Manager, Parker-Kalon Corporation

Producers' Council—(speaker to be announced)

Building Officials Conference of America—Albert H. Baum, President, BOCA and Building Commissioner of St. Louis, Mo.

ASA STANDARDS ACTIVITIES

Status as of May 6, 1949

American Standards Approved Since April 1, 1949

Brass or Bronze Screwed Fittings, 250 lb, B16.17-1949

Ferrous Plugs, Bushings, and Locknuts With Pipe Threads, B16.14-1949 (Revision of B16.14-1943)

Sponsors: American Society of Mechanical Engineers; Heating, Piping and Air Conditioning National Association; Manufacturers Standardization Society of the Valve and Fittings Industry

Letter Symbols for Gear Engineering, B6.5-1949 (Revision of B6.5-1943)

Sponsors: American Society of Mechanical Engineers; American Gear Manufacturers Association

Building Code Requirements for Signs and Outdoor Display Structures, A60.1-1949

Sponsors: American Municipal Association; Outdoor Advertising Association of America

Supplement No 1 to Steel Pipe Flanges and Flanged Fittings, B16e5-1949 (Revision of B16e5-1939)

Sponsors: Heating, Piping and Air-Conditioning National Association; Manufacturers Standardization Society of the Valve and Fittings Industry; American Society of Mechanical Engineers

Compressed Gas Cylinder Valve Outlet and Inlet Connections, B57-1949

Sponsor: Compressed Gas Association, Inc

Determination of Small Amounts of Copper, Manganese and Nickel in Textiles; ASTM D377-47T; ASA L14.49-1949

Cotton Goods for Rubber and Pyroxylin Coating, ASTM D334-40; ASA L14.50-1949

Air Permeability of Textile Fabrics, ASTM D737-46; ASA L14.51-1949

Methods of Testing Wool Felt, ASTM D461-47; ASA L14.52-1949 (Revision of ASTM D461-45; ASA L16.1-1945)

Sponsors: American Society for Testing Materials; American Association of Textile Chemists and Colorists

Practice for Photographic Processing Manipulation of Paper, Z38.8.6-1949

X-Ray Sheet Film Hangers (Clip-Type), Z38.8.23-1949

Photographic Exposure Computer, Z38.2.2-1949 (Revision of Z38.2.2-1942)

Sponsor: Optical Society of America

Standards Being Considered for Approval

By the Standards Council—

Buzz-Track Test Film for 35-Mm Motion Picture Sound Reproducers, Z22.68

Sponsor: Society of Motion Picture Engineers

Specifications for Copper Pipe, Standard Sizes (ASTM B 42-47; ASA H26.1)

Specifications for Red Brass Pipe, Standard Sizes (ASTM B 43-47; ASA H27.1)

Specifications for Bronze Castings in the Rough for Locomotive Wearing Parts (ASTM B 66-46; ASA H28.1)

Specifications for Car and Tender Journal Bearings, Lined (ASTM B 67-46; ASA H29.1)

Specifications for Copper-Silicon Alloy Wire for General Purposes (ASTM B 99-47; ASA H30.1)

Specifications for Rolled Copper-Alloy Bearings and Expansion Plates and Sheets for Bridge and Other Structural Uses (ASTM B 100-47; ASA H31.1)

Specifications for Brass Wire (ASTM B 134-48; ASA H32.1)

Specifications for Leaded Red Brass (Hardware Bronze) Rods, Bars, and Shapes (ASTM B 140-47; ASA H33.1)

Specifications for Malleable Iron Castings (Revision of ASTM A 47-47; ASA G48.1-1948)

Zinc-Coated (Galvanized) Iron or Steel Sheets (Revision of ASTM A 93-46; ASA G8.2-1947)

Sponsor: American Society for Testing Materials

Graphical Heating, Ventilating, and Air-Conditioning Symbols for Use on Drawings, Z32.2.4

Graphical Welding Symbols and Instructions for Their Use, Z32.2.1

Graphical Pipe Fittings, Valves, and Piping Symbols for Use on Drawings, Z32.2.3

Graphical Plumbing Symbols for Use on Drawings, Z32.2.2

Sponsors: American Society of Mechanical Engineers; American Institute of Electrical Engineers

Letter Symbols for Structural Analysis, Z10.8

Sponsor: American Society of Mechanical Engineers; American Association for the Advancement of Science; American Institute of Electric Engineers; American Society of Civil Engineers; American Society for Engineering Education

By the Board of Examination—

Test for Cone Penetration of Lubricating Grease, ASTM D217-48; ASA Z11.3

Test for Sulfated Residue, Lead, Iron and Copper in New and Used Suburating Oils, ASTM D810-48; ASA Z11.57

Chemical Analysis for Metals in Lubricating Oils, ASTM D811-48; ASA Z11.56

Test for Sediment in Fuel Oil by Extraction, ASTM D473-48; ASA Z11.58

Definition of Terms Relating to Petroleum (Revision of ASTM D288-47; ASA Z11.28-1948)

Test for Knock Characteristics of Motor Fuels by the Motor Method (Revision of ASTM D357-47; ASA Z11.37-1948)

Sponsor: American Society for Testing Materials

Audiometers for General Diagnostic Purposes, Z24.5

Sponsor: Acoustical Society of America

Horticultural Standards, Z60

Sponsor: American Association of Nurserymen

Letter Symbols for Electrical Quantities

Sponsors: American Association for the Advancement of Science; American Institute of Electrical Engineers; American Society of Civil Engineers; American Society for Engineering Education; American Society of Mechanical Engineers

Method of Test for Accelerated Aging of Vulcanized Rubber by the Oxygen-Pressure Method (Revision of ASTM D572-42; ASA J4.1-1943)

Method of Test for Accelerated Aging of Vulcanized Rubber by the Oven Method (Revision of ASTM D573-45; ASA J5.1-1945)

Sponsor: American Society for Testing Materials

By the Consumer Goods Committee—

Specifications for White Floating Soap (Revision of ASTM D499-39; ASA K60.4-1949)

Specifications for Milled Toilet Soap (Revision of ASTM D455-39; ASA K60.6-1949)

Specifications for Compound Chip Soap (With Rosin) (Revision of ASTM D690-44; ASA K60.8-1949)

Sponsor: American Society for Testing Materials

American Standard Reaffirmed

Dimensions for Photographic Dry Plates (Centimeter Sizes), Z38.1.31-1944, R1949

Sponsor: Optical Society of America

American Standards Withdrawn

Recommended Practice for the Installation, Maintenance, and Use of Piping and Fittings for City Gas, Z27-1933

Sponsor: National Fire Protection Association

Withdrawal of American Standard Being Considered

Miscellaneous Outside Coal Handling Equipment, M10-1928

Test for Tetraethyl Lead in Gasoline, ASTM D526-42; ASA Z11.48-1942

New Project Requested

Bakery Sanitation

Requested by: American Society of Bakery Engineers

Withdrawal of Projects Requested

Stock Sizes, Shapes and Lengths for Iron and Steel Bars, Including Flats, Squares, Rounds and Other Shapes, B41

Unification of Rules for the Dimensioning of Furnaces for Burning Solid Fuel, B50

(For News About Projects, see page 164.)

What's Happening on Projects

Safety Code for Manlifts, A90—

Sponsors: American Society of Mechanical Engineers; Accident Prevention Department of the Association of Casualty and Surety Companies

The personnel of ASA Sectional Committee A90 and the revised scope of the project on Safety Code for Manlifts, A90, both were approved recently by letter ballot of the Safety Code Correlating Committee.

The new scope of the project is: "This code applies to the construction, maintenance, inspection, and operation of manlifts in relation to accident hazards to employees. Manlifts covered by this scope consist of platforms or brackets mounted on, or attached to, an endless belt, cables, chains, or similar method of suspension; such belt, cables, or chains, operating in a substantially vertical direction and being supported by and driven through pulleys, sheaves, or sprockets at the top and bottom. These manlifts are intended for the conveyance of persons only. It is not intended that this scope cover moving stairways, elevators with enclosed platforms (Pater-noster elevators), gravity lifts, nor conveyors used only for conveying materials."

Standardization of Optics, Z58—

Sponsor: The Optical Society of America

Sectioaal Committee Z58 recently held its second meeting at the Hotel Statler, New York, with Francis W. Sears, chairman, presiding. Subcommittee progress, personnel and organization were reported, and Subcommittees IV, on Mirrors, Prisms, and Lenses, and V, on Mounting, were combined into one group under the chairmanship of R. Kingslake.

Subcommittee I has approved two proposals in nomenclature: one for radiometry and photometry, and one on nomenclature and definitions in the field of colorimetry. These will shortly be submitted to the sectional committee.

Research is under way by Subcommittee II on light sources on the determination of C_2. E. W. Beggs, chairman, has distributed literature on the WL-794 germicidal lamp, the fluorescent lamp and the mercury vapor lamps, and data have been received on zirconium arc lamps.

A list of proposed specific projects on filters and polarizing sheet materials will be discussed by Subcommittee III at its forth coming meeting in Washington.

Subcommittee IV has divided its personnel into groups responsible for optical glass, prisms, spectacles, lens elements, nomenclature, and mirrors.

Several draft standards on the specification of color have been prepared and circulated to interested persons by Subcommittee VII. The subcommittee also made the final changes in three drafted standards intended to supersede the American War Standard Specification and Description of Color, Z44-1942. These will be submitted to the sectional committee.

Because its subject matter covers several professional fields, Subcommittee VIII on vision has been divided into four working groups, as follows: visual acuity testing by optical devices, including standard testing methods and test charts; color vision testing by optical devices, including the development of test procedures and materials; methods of visual photometric evaluation; visual detection thresholds, of interest in predicting the visual range of detection of objects in the field; and spectral luminosity values, including luminosity functions at various brightness levels.

Recommended Practice for the Installation, Maintenance and Use of Piping and Fittings for City Gas, Z27-1933—

Sponsor: National Fire Protection Association.

Standards Council unanimously voted for the withdrawal of this American Standard, it was announced April 8.

A subcommittee of Sectional Committee Z21 on Domestic Gas Burning Appliances, which is sponsored by the American Gas Association, is preparing a new standard which will cover and bring up to date all the material previously contained in this 1933 edition as well as in American Standard Gas Safety Code for Installations and Work in Buildings, K2-1927, which was withdrawn March 3. The latter was also sponsored by the AGA, and by the National Bureau of Standards.

The new standard will be circulated to user groups for comment and criticism before submittal to ASA which is, however, expected sometime this year.

Comments Asked on Three Proposed Standards

Small Tools and Machine Tool Elements, B5—

Sponsors: American Society of Mechanical Engineers; National Machine Tool Builders' Association; Metal Cutting Tool Institute; Society of Automotive Engineers, Inc

The American Society of Mechanical Engineers, as administrative sponsor for Sectional Committee B5, announces distribution for comment of a proposed American Standard Designation and Working Ranges of Surface Grinding Machines of the Reciprocating Table Type and of Cylindrical Grinding Machines. Those interested may obtain copies of the tentative draft by addressing S. A. Tucker, Standards Manager, American Society of Mechanical Engineers, 29 West 39 Street, New York 18.

Also just issued for comment is the Proposed American Standard Inserted Blade Milling Cutters. This proposed standard covers the principal dimensions of milling cutters using carbide, cast-alloy, or high-speed steel inserted blades. The purpose of the proposal is to provide interchangeability and to reduce the number of sizes now in use. A survey of the different blade cutters in use indicated that in many cases the variation in the general dimensions is too small to affect their cutting results, but the number of different sizes forced users to carry unnecessarily large stocks. The committee believes that standards for general dimensions, at least, will enable manufacturers of inserted blade cutters to standardize on a relatively small number of sizes and still not prevent their supplying special sizes on demand.

Copies of the proposals may be obtained from S. A. Tucker, Standards Department of the American Society of Mechanical Engineers, 29 West 39th Street, New York 18, N. Y., by anyone interested in commenting on them.

Proposed American Standard Dimensions for Amateur Roll Film, Backing Paper, and Film Spools, Z38.1.7—

Sponsor: Optical Society of America

The first draft of this proposed American Standard, a revision of Z38.1.7-1943 through Z38.1.24-1943, was published for trial and criticism May 2. Experience in using the 1943 standards showed the need for certain revisions, such as film sizes which have become relatively unimportant and have been discontinued by some American manufacturers. Other recommendations for revision were stimulated by wartime and postwar activities of new manufacturers in the field. Suggestions concerning the dimensions of film spools came from the metal trades industry, and roll film manufacturers engineers also contributed ideas.

Copies of this proposed American Standard can be obtained from the American Standards Association without charge.

Two Standards To Be Withdrawn

Recommended Practice for Motion Picture Engineering Nomenclature, Z22.30-1941

Recommended Practice for Motion Picture Film Sensitometry, Z22.26-1941

Sponsor: Society of Motion Picture Engineers

Up for recommendation by the Board of Examination is the withdrawal of two motion picture standards, American Recommended Practice for Motion Picture Engineering Nomenclature, Z22.30-1941, and American Recommended Practice for Motion Picture Film Sensitometry, Z22.26-1941. The Society of Motion Picture Engineers is sponsor for both standards. In the case of the nomenclature standard, the reason for withdrawal is as follows:

"The intention of the term 'number of teeth in mesh' is apparently for the purpose of establishing the maximum tooth width that will not cause interference. For this purpose the term as defined is inadequate. In the first place, there are many cases in which the film does not come in contact with the 'drum of the sprocket'; in the second place, no account is taken of the path of the film for regions in which the tooth is only partly within the perforation. This part of the film path is also important in establishing conditions."

Concerning film sensitometry, the sponsor feels that

"Extensive and continued experience has shown that the time scale sensitometry possible with the instrument specified in this standard leads to conclusions at variance with the practical experience."

For this reason it is felt that American Standard Z22.26-1941 is detrimental rather than helpful to the motion picture industry.

New American Standards Available

ASA Number	Title of Standard	Price
A9.1-1949	**Building Exits Code**	$1.00

Latest revision of this code contains major changes in Chapter 8, Moving Stairways; Chapter 26, Hotels (formerly Hotels and Apartment Houses); and a new Chapter 28, Apartment Houses. (*Sponsor:* National Fire Protection Association)

A60.1-1949	**Signs and Outdoor Display Structures, Building Code Requirements for**	.50

Technically sound requirements are provided here for design, erection and maintenance of signs and structures carrying messages to the public. (*Sponsors:* American Municipal Association, Outdoor Advertising Association of America)

A93.1-1948	**Indiana Limestone, Specifications for**	.50

Intended primarily for reference use by architects and engineers, this standard covers Indiana Oolitic Limestone, used as cut stone or as random ashlar. (*Sponsor:* Indiana Limestone Institute)

Incandescent Lamp Standards

C78.100-1949	**General Service for 115-, 120-, and 125-Volt Circuits**	.25
C78.101-1949	**General Service for 230- and 250-Volt Circuits**	.25
C78.102-1949	**Train, Locomotive, and Country Home Service, 30-34 and 60-64 Volts**	.25
C78.103-1949	**Street Railway Service**	.25
C78.105-1949	**Spotlight and Floodlight Service, 115, 120, and 125 Volts**	.25
C78.106-1949	**115-125 Volt Service**	.25
C78.107-1949	**Projector and Reflector Spotlight and Floodlight Lamps, 115, 120, and 125 Volts**	.25
C78.109-1949	**Street Series Service**	.25
C78.140-1949	**Miniature Incandescent Lamps**	.25
C78.200-1949	**S-6 Bulb, Candelabra Screw Base; C-7 Bulb, Candelabra Screw Base**	.25
C78.201-1949	**S-11 Bulb, Medium Screw Base**	.25
C78.202-1949	**S-11 Bulb, Intermediate Screw Base**	.25
C78.203-1949	**S-14 Bulb, Medium Screw Base**	.25
C78.204-1949	**A-15 Bulb, Medium Screw Base**	.25
C78.205-1949	**A-17 Bulb, Medium Screw Base**	.25
C78.206-1949	**A-19 Bulb, Medium Screw Base (Overall Length — Max. 3-15/16 Inches, Min. 3-9/16 Inches)**	.25
C78.207-1949	**T-6½ Bulb, Intermediate Screw Base**	.25
C78.208-1949	**T-10 Bulb, Medium Screw Base**	.25
C78.209-1949	**T-10 Reflector Bulb, Medium Screw Base**	.25
C78.210-1949	**A-19 Bulb, Medium Screw Base (Overall Length—Max. 4¼ Inches, Min. 3⅞ Inches)**	.25
C78.211-1949	**A-19 Bulb, Medium Screw Base (Overall Length—Max. 4-7/16 Inches, Min. 4-1/16 Inches)**	.25
C78.212-1949	**T-8 Bulb, Medium Screw Base**	.25
C78.213-1949	**PS-25 Bulb, Three-Contact Medium Screw Base**	.25
C78.214-1949	**PS-25 Bulb, Three-Contact Mogul Screw Base**	.25
C78.215-1949	**A-21 Bulb, Medium Screw Base (Overall Length—Max. 4-7/16 Inches, Min. 4⅛ Inches)**	.25
C78.216-1949	**A-21 Bulb, Medium Screw Base (Overall Length—Max. 5-5/16 Inches, Min. 4-15/16 Inches)**	.25
C78.217-1949	**A-21 Bulb, Medium Screw Base (Overall Length — Max. 4-15/16 Inches, Min. 4-9/16 Inches)**	.25
C78.218-1949	**A-23 Bulb, Medium Screw Base**	.25
C78.219-1949	**G-30 Bulb, Three-Contact Mogul Screw Base**	.25
C78.220-1949	**PS-25 Bulb, Medium Screw Base**	.25
C78.221-1949	**PS-30 Bulb, Medium Screw Base**	.25
C78.223-1949	**PS-35 Bulb, Mogul Screw Base**	.25
C78.224-1949	**PS-40 Bulb, Mogul Screw Base**	.25
C78.225-1949	**PS-52 Bulb, Mogul Screw Base**	.25
C78.226-1949	**P-25 Bulb, Medium Screw Base**	.25
C78.233-1949	**G-30 Bulb, Medium Screw Base**	.25
C78.234-1949	**G-40 Bulb, Mogul Screw Base (Overall Length—Max. 7-1/16 Inches, Min. 6½ Inches)**	.25
C78.235-1949	**G-40 Bulb, Mogul Screw Base (Overall Length—Max. 8 Inches, Min. 7-7/16 Inches)**	.25
C78.236-1949	**R-40 Bulb, Medium Skirted Screw Base**	.25
C78.237-1949	**R-40 Bulb, Medium Screw Base**	.25
C78.238-1949	**PAR-38 Bulb, Medium Skirted Screw Base**	.25
C78.245-1949	**PS-25 Bulb, Mogul Screw Base**	.25
C78.248-1949	**T-64 Bulb, Mogul Bipost Base**	.25
C78.249-1949	**G-30 Bulb, Medium Skirted Screw Base**	.25

The entire series is available at $5.00; in a binder $6.75. Binder alone, $1.75.

This series of 44 single-sheet standards gives dimensions and specifications for electrical characteristics of incandescent lamps. (*Sponsor:* Electrical Standards Committee)

Z22.61-1949	**Sound Focusing Test Film for 35-Millimeter Motion Picture Sound Reproducers (Service Type)**	.25

This standard is another in a series pertaining to 35-millimeter motion pictures. (*Sponsor:* Society of Motion Picture Engineers)

Z38.8.20-1948	**Determining the Melting Point of the Photographic Layer of Films, Plates, and Papers, Method for**	.25

Here is another standard in the series giving specifications for photographic materials. (*Sponsor:* Optical Society of America)

Changeover to New Unified Thread System Calls for Consumer Cooperation

To minimize any misunderstanding during changeover from the 1935 screw thread standards to the new Unified 2A and 2B tolerances, the Sectional Committee on Standardization and Unification of Screw Threads, B1, (the body responsible for the new American Standard for Unified and American Screw Threads) at its meeting on April 14, 1949, drafted the following release to industry:

> The most significant modification in the Unified and American Screw Thread Standard is the addition of Classes 2A and 2B.
>
> Class 2A is an external thread classification which provides an allowance or clearance between its maximum metal condition and the maximum metal condition of any class of internal thread into which it assembles. This clearance minimizes galling and seizing in high-cycle wrenching and high temperature applications. It also accommodates plating when required. Class 2A is recognized as standard practice for production of screws, bolts, and other threaded fasteners. Class 2B is a realistic approach to the tolerances required in the production of standard nuts.
>
> Changing to Classes 2A and 2B does not affect strength or interchangeability. Components are mechanically and functionally interchangeable in any combinations of the old and new classes.
>
> Specification and adoption of these new classes of thread into actual practice will require restraint on the part of the users in order to afford manufacturers opportunity for reduction of present inventories of finished product and the working off of current stocks of tools and raw materials.
>
> To implement changeover to the new classes of thread, users for an indeterminate period should specify the new classes but permit the old classes as optional. Conversely when specifications are not changed, users should accept the new classes as optional.
>
> Producers and users have agreed that implementation of the new standards should proceed as rapidly as transition can be effected, and that inspection should be governed accordingly. They recommend, however, that for the time being neither the new nor the old classes as they apply to screws, bolts, nuts and similar threaded fasteners, should be mandatory except for specific applications agreed upon by consumer and producer.

Dr Jewett Resigns From Board of Directors

Dr. Frank B. Jewett, one of the country's elder statesmen in the fields of research and development, and in standardization, has resigned from the Board of Directors of the American Standards Association because of ill health.

Dr. Jewett became a member of the Board in September, 1918, having been active in ASA for many years. He headed the group which prepared the constitution for the Electrical Standards Committee, and was largely responsible for Bell Telephone Laboratories joining the ASA Telephone Group.

In his active career Dr. Jewett served as vice-president in charge of research and development, then president, of the American Telephone and Telegraph Company, and later became chairman of the board of Bell Telephone Laboratories. From 1939 to 1947 he was president of the National Academy of Sciences, ranking scientific body of the country, and official scientific advisor to the government.

ISO Calendar for June and July

The latest calendar of meetings of technical committees of the International Organization for Standardization and its electrical department, the International Electrotechnical Commission, shows the following schedule for June and July:

June 13, Stresa, Italy—Council, International Electrotechnical Commission
June 13-15 Stresa, Italy—IEC/AC 8, Standard Voltages and Current Ratings, High Voltage Insulators
June 13-15 Stresa—IEC/AC 10, Insulating Oils
June 16-18 Stresa—IEC/AC 17, Switchgear
June 16-18 Stresa—IEC/AC 22, Electronic Devices
June 27, 28 Paris, France—ISO/TC 4, Ball and Roller Bearings
June 27-29 Paris—ISO/TC 8, Shipbuilding Details for Sea Navigation
June 28-30 Paris—ISO/TC 1, Screw Threads
June 30 Paris—ISO/TC 9, Shipbuilding Details for Inland Navigation
June 30 and July 1 Paris—ISO/TC 59, Building Construction
June 30-July 2 Paris—Committee on Modification of Statutes
July 1, 2 Paris—ISO/TC 19, Standard Diameters and Preferred Numbers
July 1, 2 Paris ISO/TC 2, Bolts, Nuts and Accessories
July 2, 4 Paris—ISO/TC 44, Welding
July 4 Paris—ISO/TC 3, Limits and Fits
July 5-6 Paris—Council, International Organization for Standardization
July 7 Paris—General Assembly, International Organization for Standardization
July 8 Paris—Council, International Organization for Standardization

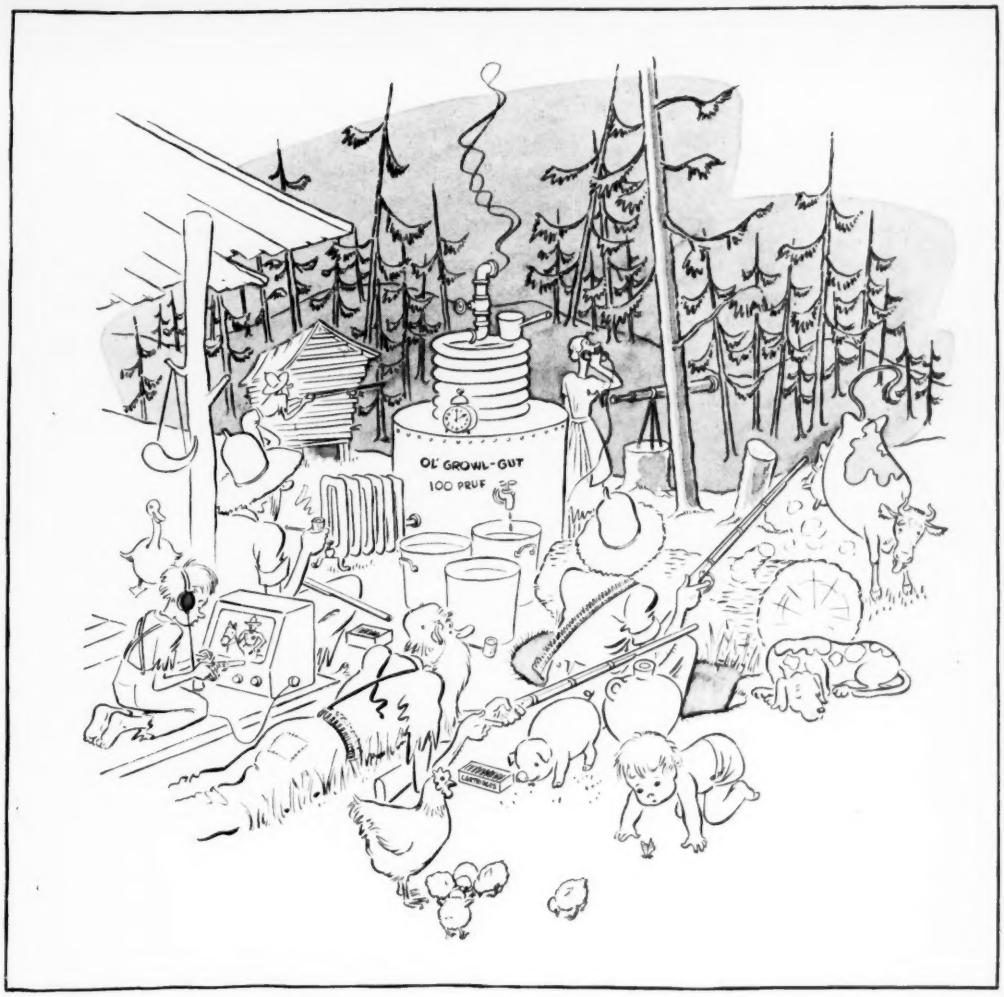
(See page 149 for list of U.S. delegates attending the international screw thread meetings in Paris.)

NYU Conducts Study On Work Performance Standards

Research that is expected to lead to the development of uniform standards of work performance on similar job operations for wide use throughout industry is now being carried out on a large scale, it was reported at the annual time study and methods conference of the Society for the Advancement of Management. The Society expects that more than 100 firms will cooperate.

Herbert A. Lynch, engineer on a project being carried out in the research division of New York University, reported that it had been determined that sufficient films of representative work operations were available to complete the program. He declared that different methods were now used by time-study experts in determining how far performances in individual operations differ from "normal" because of varying concepts of what is normal. To arrive at useful standards, films will be assembled from plants of various types and the performances shown will be rated by time-study experts in approximately 100 companies.

The sample of 150,000 ratings, Mr. Lynch said, should be of sufficient size to establish standards which reflect accurately present day conception of proper performance.



HOW'S YOUR BUSINESS... STILL?

NOT *your* business, of course! But you'd be surprised how many businesses are STILL out in the bushes, progress-wise... and thoroughly fortified against the approach of any "suspicious persons" who might want to do business with them.

That's a good guarantee of a private, one-man "recession" *any* time. And, in touchy times, not a few fall (unwittingly) into this type of so-called business thinking.

But Bristol, for 99 years now, has kept its business thinking young... extroverted... directed outward... *on the selling side.* And we use our guns to go out and *get* business, rather than stay home and fight it off.

The Bristol arsenal, what's more, is in better fighting shape than ever, with a lot of new equipment in the mills... including *continuous casting.*

Now if you are ready, willing and able to do business as we are... *let's get together.* And let's show you how Bristol Brass sheet, rod and wire can give *your* products a new forward drive to new markets and profits. Let's not sit STILL. *Let's get going!*

THE
BRISTOL BRASS
CORPORATION

Makers of Brass since 1850, Bristol, Conn.

15 Park Row, New York City
418 Frick Building, Pittsburgh, Pennsylvania
1607 South Broadway, Dayton, Ohio
703 Temple Building, Rochester, New York
538 Hospital Trust Bldg., Providence, Rhode Island